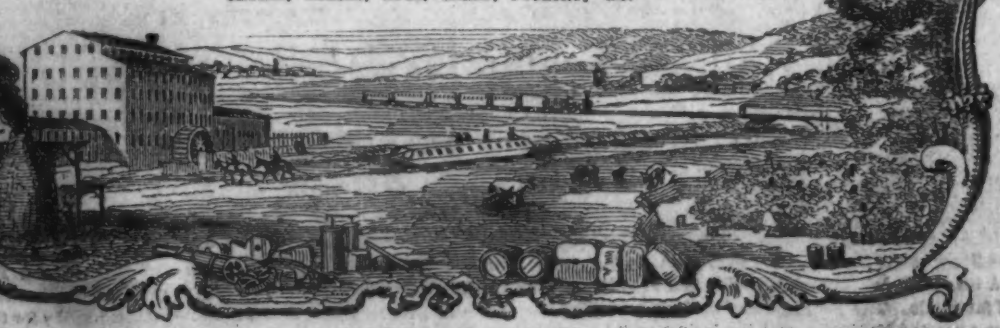
No. 1. July, 1854. Vol. 7.

THE PLOUGH

THE LOOM AND THE ANVIL.

FARMER AND MECHANIC.

DEVOTED TO SCIENTIFIC AND PRACTICAL AGRICULTURE—MANUFACTURES—MECHANICS—NEW INVENTIONS—A SOUND PROTECTIVE POLICY—FARM BUILDINGS—COTTAGE DESIGNS—FRUIT TREES—FLOWERS—GARDENING—BEES, CATTLE, HORSES, HOGS, SHEEP, POULTRY, &c.



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New-York State Agricultural Society,
State Agricultural Rooms, Albany, Feb. 20, 1859.

At the Show of the Society, held at Buffalo, in September last, a *Cattle-weighing Machine* was erected by Messrs. T. & B. Fairbanks & Co., of St. Johnsbury, Vt. The Scales of Messrs. Fairbanks were selected as most likely to give satisfaction to the exhibitors of fat cattle. The judges appointed on miscellaneous articles awarded the first premium of the Society for the machine which was erected by them,—and the judges on fat cattle, who superintended the weighing of all cattle exhibited, expressed their approbation of the great accuracy of the machine.

BENJ. P. JOHNSON, Cor. Secretary.

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The Plough, the Loom, and the Anvil.

Vol. VII. JULY, 1854. No. 1.

BIOGRAPHICAL NOTICE OF JOHN S. SKINNER.

BY BEN. PERLEY POORE.

John Stuart Skinner is one of those names which should not pass away without some embalming token of grateful recollection. The pioneer of the American agricultural press—the champion of those who nobly toil at "the plough, the loom, and the anvil"—the faithful government officer—the spotless citizen—the true friend and the kind relative, Col. Skinner's eminent talents and useful life merit a record, even though it must of necessity be brief. Imperfect as the following biographical sketch may be, it is dictated by the deepest conviction that it chronicles the labors of one to whom the republic remains deeply indebted. The materials, generally speaking, were obtained during a long acquaintance with Col. Skinner, and are now gladly contributed to a demonstration of respect to his memory, so blended with a tribute to the widowed partner of his unrewarded career, as to render the testimonial more than the customary oblation of cold, posthumous honor. Respected, esteemed, and loved during life, Col. Skinner's name has passed the stern ordeal of the grave with imperishable lustre, while his virtues "smell sweet, and blossom in the dust."

Robert Skinner, an English country gentleman of considerable fortune, was one of the first settlers of Maryland, when that colony was founded, at the commencement of the seventeenth century, by the estimable Sir George Calvert, Lord Baltimore. The domain selected by the colonists is still owned by one of his descendants, and occupies a desirable position on the peninsula between the Pawtuxent River and Chesapeake Bay. It contains about six hundred acres of land, well adapted to the culture of tobacco. The adjoining plantation, belonging to the Johnson family, was the birth-place of Governor Johnson, (the ancestral relative of Mrs. John Quincy Adams,) and also of Mrs. Zachary Taylor.

Frederick Skinner, (great-grandson of Robert, and father of John Stuart Skinner,) is described as a gentleman of strongly-marked character—equally noted for his prompt decision, his old-fashioned common-sense, his mechanical ingenuity, and his open-hearted benevolence. Early in the Revolution, he received a commission in the "Maryland Line," and he performed good service in the regiment of light troops known as the "flying-camp." After independence was secured, Mr. Skinner gave his undivided attention to agriculture, cultivating his ancestral estate, and also another tract of about seven hundred acres of land, nearer the court-house of Calvert county. This was the marriage-portion of his wife, who was a daughter of Captain Stuart, an ardent Whig, whose ship-yard on West-River, Md., with vessels on the stocks, was burned by the British during the revolution. One of her brothers, Stephen Stuart, Esq., was a merchant of distinction in the early days of Balti-

more's commercial prosperity. Another, John, or, (as he was called by his soldiers,) "Jack" Stuart, was a gallant, though somewhat reckless officer in the revolution, serving throughout the struggle with such courage and zeal as to win the commendation of his comrades, especially the heroic La Fayette. He was especially distinguished at the recapture of Stony-Point, where (by especial request of General Wayne) he commanded the volunteers who headed the left division of the storming party. Congress voted him a medal for his bravery in this action, which was afterward presented to his heirs by President Washington. One of the emblematical devices represented Colonel "Jack," barefooted, as he actually clambered up the parapet.

John Stuart Skinner (named after his uncle) was born on the 22d day of February, 1788, and was reared upon his father's plantation. Often have we heard him relate, with particular yet mournful zest, his juvenile labors in picking cotton, or pulling blades, or journeying on a "tackey" with leather to the shoemaker, yarn to the weaver, or cloth to the tailor. Tobacco and corn were his father's staple crops, but it was the old gentleman's rule to raise every thing used on his plantation, with the exception of iron, sugar, and coffee. The lad thus became acquainted with the practical details of spinning, weaving, tanning, distilling, milling, and blacksmithing, all of which were carried on at his home. This impressed his mind, at an early age, with the axiom that all industrial pursuits incline to cluster around the plough, and that agriculture prospers as other occupations yield to its attraction. Among other excellent works put into his hands by his father, was a pamphlet showing the exhausting tendency of shallow ploughing, written by a strong-minded Quaker, named Moore. It first led him to regard agriculture as an intellectual pursuit, replete with philosophy, and susceptible of being improved by the application of science.

After acquiring the rudiments of education at the county-schools taught on his father's or some neighboring estate, young Skinner was sent as a pupil to Charlotte-Hall, St. Mary's county, one of the best classical academies in Maryland. At the age of eighteen, he was placed in the office of the clerk of the county court, and while there, engaged in transcribing legal documents, was invited to read law at Annapolis, with Chancellor Johnson, father of the Hon. Reverdy Johnson. A similar invitation from Judge Allen Duchet induced his father to send him to Annapolis, and soon after his arrival these eminent lawyers secured his appointment as reading-clerk to the Legislature. The next year, Gov. Wright appointed him Notary Public for the city of Annapolis, overcoming objections made by some of the councillors on the ground that he was yet in his minority, and consequently ineligible. What others learned by experience, the young student appeared to see by intuition, and his father was soon frequently gratified to hear veteran members of the bar compliment the ability of his son. As was anticipated, he passed a triumphant examination, although his public duties had occupied much of his time, and at the age of twenty-one he commenced practice as a counsellor and attorney.

On the 10th of March, 1812, Mr. Skinner married Miss Elizabeth G. Davies, a step-daughter of Chancellor Bland. This he ever regarded as the happiest event of his life, retaining for the bride of his youth "that love which is peculiar to men of strong minds—men whose affection is not easily won or widely diffused." It was well merited, for while she adorned his domestic hearth by her virtues and her accomplishments, she steadily encouraged him in his self-sacrificing literary career. More lucrative paths were frequently opened to him, and she saw his early professional associates accu-

mulate fortunes, but she never murmured as he toiled on unrewarded in his noble mission. Exhibiting that heroic virtue which sacrifices private interests to the public good, Mrs. Skinner merits the substantial gratitude of those who walk in her lamented husband's footsteps, and who profit by his thirty years' unrequited labor in laying a stable foundation for our national prosperity. During nearly forty years, Mr. and Mrs. Skinner furnished an interesting picture of conjugal felicity, united, not only in affections and interests, but in tastes and inclinations. To the associates of their youth their married life was a pleasant remembrance; to their younger friends, (and few had more,) it was a source of admiration. All sincerely mourned when this ripened garland of hymeneal intercourse was snapped—when the devoted wife was smitten with sudden gloom, like the visitation of an eclipse—when this happy social picture was dashed by an Almighty hand into a portrait of premature loneliness—for "one was taken and the other left."

Soon after the declaration of war, the young lawyer was called into a new sphere of action. The intercourse by mail between Europe and the United States was carried on by means of British mail-packets—gun-brigs, which plied monthly between New-York and Falmouth. Instead of stopping this channel of communication, the United States government required the packets to make Annapolis their American port, and Mr. Skinner was appointed agent to look after them. It was his duty to receive and forward the mails, to furnish the vessels with necessary supplies, and to see that nothing transpired prejudicial to the interests of the republic, or offensive to enemies thus admitted under the guardianship of a flag of truce. It was an altogether new, delicate, and responsible trust, for which President Madison himself framed a commission, and selected Mr. Skinner to execute it.

A few weeks later, he was appointed agent for prisoners of war, upon the nomination of General John Mason, commissary-general of prisoners. The two offices were attached to the Department of State, with a salary of $1800 per annum, and he gave great satisfaction to the government. Always alive to a sense of duty, he never faltered in nor shrunk from the performance of it. Even the British officers were captivated by his generous nature, and with several of them official courtesies ripened into friendships which lasted through life.

In the fall of 1813, Mr. Skinner was ordered to remove his offices to Baltimore, and before he was fairly established there, he was offered a purser's commission by the Secretary of the Navy. This unexpected honor he at first declined, having no taste for a nautical life, and supposing that at any moment he would be liable to be ordered to sea. But he accepted, on being informed that the object of the government in appointing him was to secure his services at Baltimore, where two sloops-of-war and a flotilla of gun-boats were being fitted out. When the flotilla was equipped, the expenditures were very heavy, as Commodore Barney had upward of a thousand men under his command, but Mr. Skinner performed his arduous duties to the end of the war, and for years afterward, to the entire satisfaction of the government, as well as its accounting officers. He was frequently detailed to act as judge advocate on courts-martial, and won the warm friendship of the gallant defenders of our flag in that hour of peril.

At the approach of the British forces upon Washington, Mr. Skinner rode ninety miles in the night, and first announced to the government their march, after having warned Commodore Barney previously of their hostile intentions. By way of retaliation, the "red-coats" burned the valuable buildings on his St. Leonard's-creek estate, for which he never sought any reïmburse-

ment from Government, although compensation was granted for property destroyed on a neighboring plantation, at the same time, and by the same forces.

A few weeks later, Mr. Skinner went down the bay on an official visit to Admiral Cockburn, to negotiate for the exchange of some gentlemen who had been captured from their plantations. He was accompanied by the accomplished Francis S. Key, Esq., and they of course sailed under a flag of truce. But on reaching the British squadron, they found the enemy on the point of sailing to attack Baltimore, and they were politely informed that they could not return "until the city was taken." Meanwhile, they would be welcome on board the flag-ship, or could remain on board the yacht in which they came, on "parole." Choosing the latter, the British commander took away their sails, and sent a guard of sailors on board of the yacht. Here Mr. Skinner and his friend remained during the bombardment of Fort McHenry, to the annoyance of their guard, who wished to desert, but were restrained by the "prisoners." The British not succeeding in their attempt, the gentlemen had their sails restored, and were permitted to return to Baltimore, with apologies for their detention. Immediately on landing, they went to the old "Fountain Inn," on High street, where Mr. Key wrote that justly-admired song, the "Star-spangled Banner." It was a literal description of their feelings during the night of the bombardment, when the rockets and the bombs betokened the assaults of the enemy, and of their patriotic joy when in the gray light of early dawn they saw the starry ensign waving in proud defiance. Mr. Skinner, ere the song was completed, saw its beauties, and obtaining Mr. Key's permission to have it published, took copies of it to the printing-offices of the morning papers. Ere long, it resounded through the republic like a recovered echo of Thermopylæ—its stirring notes, (like those of the Marseillaise hymn in France) finding an accompaniment in the throbbings of every American heart.

In 1816, (being still and for years after purser on the station,) President Madison appointed Mr. Skinner postmaster of Baltimore, then the third city in the Union. This office, which was one of labor and of high responsibility, he held for twenty-three years, when he was removed by President Van Buren, in accordance with his "system." Meanwhile he declined a territorial judgeship from Mr. Madison, and the post of Secretary of State of Arkansas from his warm personal friend Mr. Munroe. Messrs. Adams and Jackson each honored him with the appointment of visitor of the West-Point Academy, and his re-nomination as postmaster of Baltimore by the latter, just before his term expired, was unanimously confirmed by the Senate.

Agriculture, at this period, was at a low ebb in the Middle States. After the conflicting armies of Europe, wearied with the conflict, had turned their swords into plough-shares, the prices of American bread-stuffs naturally declined. The soil, too, was becoming gradually exhausted, especially in Maryland, whose tobacco crops had paid so many of the drafts for foreign supplies during the revolution. No other commonwealth in the world is so beneficially bounded and indented by navigable water—or so abounds in calcareous and other rich fertilizing substances—or is so capable of easy culture and recuperation. Yet in a few years after the silver-toned trumpet of peace echoed along her shores, Maryland fell into an agricultural paralysis. As her sons grew up, they moved away to "wear out" in its turn the fertile prairies of the West, and the old homestead mansions, often sadly out of repair, were swarming with old maiden daughters, many of them so beautiful and so excellent that no change could have improved them—save a change of name.

An ardent lover of his native State, and sensibly alive to her stagnant condition, Mr. Skinner had the sagacity to foresee that a continuation of this position of things must be productive of consequences not only ruinous but destructive. An able series of papers signed "Avator," (from the pen of Col. John Taylor, of Carolina,) led him to investigate the subject, and the avidity with which these essays were read, when re-published in book form, edition after edition, led him to conceive the idea of establishing an agricultural paper. Happy thought! Every political party, every religious sect, every prominent business locality used the mighty engine of civilization—but the farmers, that immense majority of citizens, had no "organ." In supplying this want, Mr. Skinner supplied the first germ of modern agriculture, which thenceforth began to soar up, phœnix-like, from the ashes of a wrong popular judgment.

The *American Farmer* was pronounced by all an excellent title, and after long consultations with Mr. Joseph Robinson, the printer, nothing was wanting but a "motto," then considered an indispensable part of a newspaper heading. Just then, Mr. Skinner met at a hospitable dinner-table a clergyman from the Green Isle, who was well versed in classical lore. His aid was solicited, and he promptly replied: "Och sir, yes! you may give them from Virgil, '*O fortunatos nimium sua si bona norint agricolas.*'" The motto was approved, and has been retained to this day.

Number one of the new paper appeared on Friday, the second day of April, 1819, the date having been changed from the *first*, in fear that it might be ridiculed as an "April-fool" enterprise. It was a neatly printed quarto sheet of eight pages, each page measuring nine inches by eleven. It was illustrated with an engraving of the ox "Columbus," and contained interesting articles on rural economy, amusements, etc., etc., with a "summary of intelligence," and a "price current." "The editor," says the conclusion of the introductory leading article, "is aware that 'to *promise* is most courtly and fashionable;' he will therefore only add that the *American Farmer* will be conducted on broad and liberal principles, containing nothing indecorous or personally offensive to the feelings or character of any sect or individual. And further, that if at the end of the year, any subscriber should think he has not received his 'penny'orth,' he shall be at liberty to withdraw, and his subscription money shall be repaid to him on demand."

The *American Farmer* at once gained a respectable list of subscribers at $4 per annum, and, as it was at first deemed hazardous to print more than five hundred copies, it was necessary to reprint a portion of the first volume three times, in order to answer the demands of new patrons, who wished complete sets. The editor devoted every leisure moment to its columns, and was soon ably seconded by a phalanx of the most enlightened agriculturists in the country. Among these were Col. Taylor, Thos. Jefferson, Timothy Pickering, Gen. Armstrong, Col. Lloyd, G. W. P. Custis, Caleb Kirk, and others of great ability.

Cobbett, at this time, was farming on Long-Island, and Mr. Skinner published several able articles from his pen on Ruta Baga, seed of which "the Radical" sent to Baltimore by his man-servant, and sold in considerable quantities. The culture of rape, and the introduction of the Bactrian camel, were also among the first new ideas promulgated, and the volume was illustrated with engravings often costing $40 to $50.

The editorial labors of Mr. Skinner were mostly performed in the evening, for it would not have answered had he neglected his postal duties, nor did any out of his family know how diligently he toiled, late into the night. He

soon informed his readers that they "must not expect light ephemeral speculations and essays, cooked up to satisfy the ever-craving appetites of newsmongers and politicians; the science of agriculture is difficult; the very nature of its operations laborious and enduring through the whole year; it is to be expected therefore that essays treating of the vegetation, growth, and management of a single object, will often be long and tedious." Evident was it, in every number, that the paper "was not undertaken with a view to private emolument, so much as with the wish to employ the editor's leisure hours in a way that would render real service to the most important class of his fellow-citizens." Earnestly did he utter novel thoughts upon matters previously considered "worn out," like a thorough musician who strikes vigorous chords upon a piano which has been devoted to the namby-pamby performances of boarding-school misses.

The second volume of the *American Farmer* was commenced under the most favorable auspices, and Mr. Skinner felt justly encouraged by the long list of subscribers who had honored his exertions. Unluckily he was unable to give expression to his gratitude as he passed the first mile-stone of his chosen career, having been fairly worn down by anxious and embarrassing postal duties. The great northern mail had been robbed between Baltimore and Washington, and the driver killed, causing much excitement. A large portion of the male population thereabouts joined in a pursuit of the culprits —two in number—who were at last taken, and afterward punished. It was not only Mr. Skinner's duty to head this movement in aid of justice, but for weeks he was occupied in answering inquiries respecting missing letters, leaving no time for editorial labor except in the evening at the fireside, "most probably the very place," as he remarked, "where the farmer communes with the editor."

A few weeks later, we find in the *American Farmer* a notable example of Mr. Skinner's purity of heart and unrelaxed sincerity of principle. He had selected for publication some extracts from an old pamphlet, but the compositor accidentally copied other paragraphs, containing indecorous expressions. The edition was printed, and the clerk had mailed many of the papers, when Mr. Skinner arrived at the office in breathless haste. He had just discovered the offensive remarks, and lost no time in ordering a duplicate edition, expunging the expressions "which would have sullied the whole volume." Most editors would have considered an expression of regret a sufficient atonement, but Mr. Skinner, at an expense of nearly eighty dollars, effectually corrected the error. Every number of the objectionable edition was recalled and destroyed.

The summer of 1820 was characterized by an uninterrupted continuation of hot weather, which, with steady official and editorial labor, prostrated Mr. Skinner's system. His physician prescribed a journey on horseback to the mountain springs of Virginia, and he passed the months of August and September (1820) in that splendid farming region between the Blue Ridge and the Alleghanies, which is drained by the Shenandoah, embedded throughout with limestone, and shaded with groves of sugar-maples. Thirty years afterward he recalled with delight the impression made by the view in emerging from that picturesque pass at the confluence of the Shenandoah and the Potomac—with the yet deeper impressions made on a heart then comparatively fresh by the warm welcome received at the hospitable mansions of the Turners, the Holmeses, the ~~Skites~~ Hites, the Caldwells, the Minors, and other country-gentlemen of the Old Dominion. Returning by Rockfish Gap, Mr. Skinner visited the farm-shrine of Monticello, where Mr. Jefferson entertained him

with great kindness, enlisting among the contributors to the *American Farmer*. At dinner, however, the philosophical politician almost forced his guest to eat "millet," (then the ascendant in his constant succession of hobbies,) and to drink mixed wines. The consequence was an internal commotion, which ever rendered Mr. Skinner rather incredulous as to the dietary wisdom of the "Sage of Monticello."

Returning to Baltimore with invigorated health, Mr. Skinner resumed his double labors, and commenced a correspondence of great interest with Sir John Sinclair, the able exponent of British agriculture. It was to Mr. Skinner that the worthy baronet first communicated his valuable correspondence with General Washington, with a request that he would superintend its publication in America, the profits of which were to be applied to the erection of a monument to the illustrious "Farmer of Mount Vernon," at Caithness, in Scotland. Mr. Coke and Lord Erskine were also subscribers to the *American Farmer* and corresponded with its editor, who was highly complimented at one of the "Holkham sheep-shearings by the distinguished host."

At the fall meeting of the "Maryland Agricultural Society," Mr. Skinner delivered an able address upon cultivated grasses, fruit trees, and the professional diffidence of farmers. "The attainment and dissemination of practical knowledge" he considered "the chief aim and end of an agricultural society." "Their value is to be measured, not by the number of people in attendance, nor yet by the number of things exhibited—but by the new facts and valuable additions they bring to the stock of agricultural knowledge."

A "stock farm," for the systematic improvement of the breeds of domestic animals, next occupied Mr. Skinner's active mind, and at the commencement of the year 1821 he was enabled to establish one by the coöperation of R. Oliver, Esq., and Major Isaac McKim. The estate selected was known as the "Maryland Tavern," situated about four miles from Baltimore, on the Great Western Turnpike Road, and contained two hundred acres of good land, with excellent buildings. Here the semi-annual fairs and meetings of the Maryland Agricultural Society were to be held, affording the best farmers of the neighboring States an opportunity to examine and purchase the stock, which was to be preserved in its original purity as imported. Sir John Sinclair, Sir Alexander Don, M.P., and other eminent British stock-raisers gave Mr. Skinner much valuable information as to the best breeds for him to import, upon which he based his orders. His friend Purser Hambleton promised some stock from the Mediterranean; Gorham Parsons, Esq., sent him some swine from his estate at Byfield, Mass.; and he obtained some of the best blooded animals in the Middle States. Among them were the high-bred horses "Clifton" and "Young Tom," the Maltese Jack "Sancho," with cattle of the Alderney, Teeswater, and Devon breeds.

In May, 1821, several hundred extra sets of the *American Farmer* were destroyed by fire when in the hands of the binder. This rendered it necessary to re-print the two first volumes and a portion of the third, in order to supply constant demands from new subscribers for the entire work. Many subscribers had sent their second volume to the same bindery, but their loss was supplied by Mr. Skinner from his new edition, gratuitously. This unostentatious liberality was one of the sterling traits in Mr. Skinner's character, which won him the respect of the community and the love of friends. In some hands the *American Farmer* would have been a mine of wealth to its proprietor, with its large list of subscribers paying four dollars per annum each. But Mr. Skinner's only object in receiving subscriptions appeared to

be an acquisition of funds for increased expenditures. Rare agricultural works were imported, engravings were plentifully furnished, and many a copy was sent to that importunate horde of periodical cormorants, technically termed by publishers as "dead-heads."

The cattle show of the Maryland Agricultural Society was held on the 7th and 8th of June, at the "stock farm," where a large collection of valuable animals was exhibited, to the gratification of a numerous assemblage. Mr. Skinner's private stock was much admired, especially "Columella," a fine animal of the Holderness breed, just received from Gorham Parsons, Esq., who had imported the stock into Massachusetts; and a pair of "Tunis mountain broad-tail sheep," presented by Commodore Jones and Captain Booth, U. S. N. Soon afterward the stock was further increased by a pair of those Tuscan cattle renowned since the days of Virgil, as admirably fitted for the yoke. They were brought from Tuscany by Purser S. Hambleton, and ceded to Mr. Skinner at their original cost, as a contribution to the introduction of useful animals.

Mr. Skinner ever regarded the officers of the navy, (with many of whom he had official relations,) as foremost among his friends and correspondents. Not only did they subscribe more liberally than any other class to the *American Farmer*, but they brought home original communications, agricultural works, stock, poultry, and seeds, as tokens of their regard for "Purser Skinner." Among these useful allies were those gallant spirits, Hull, Chauncey, Bainbridge, Rogers, Jones, Porter, and Perry. The seeds which they brought, as well as those contributed from various parts of the Union, were liberally distributed under Mr. Skinner's frank as postmaster, a clerk being intrusted with the especial duty of preparing them for the mail.

In 1822, with funds liberally supplied by Robert Oliver, Esq., Mr. Skinner imported "Champion," "White Rose," and "Shepherdess," three beautiful animals of the improved short-horned breed of cattle, reared by that noted herdsman, Mr. Charles Champion, of Nottinghamshire, England. When exhibited at the cattle show, on the last days of May, they excited unqualified admiration, and Governor Lloyd (then the largest if not the best practical farmer in Maryland) was so delighted with the perfection of their symmetry, that, within twenty minutes after he first saw them, he had purchased them for $1500. This was about their first cost, and about the same time Mr. Skinner also sold, without profit, his Tuscan cattle to Mr. John Middleton, of S. C.

This successful effort to improve the stock of the republic was recommended to the especial notice of the Maryland Agricultural Society by the committee on "neat cattle," and the applause with which the recommendation was received, evinced a general desire to show a public appreciation of the benefits thus conferred upon the whole farming community. Accordingly, upon motion of the well-known George Calvert, of Riversdale, the Society voted Mr. Skinner three costly pieces of plate, as a compliment for the service he had rendered in exhibiting living and incontestable proof of the high point to which the art of breeding had been carried in mother England. This valuable testimonial was accordingly procured and presented in behalf of the Society, by Gen. Ridgley, of Hampton, Henry Thompson, Esq., and Dr. Allen Thomas, a special committee chosen for the purpose.

In 1823, Mr. Skinner took an active part in organizing monthly social meetings of the trustees of the Western Shore Branch of the Maryland Agricultural Society, and also a society for the improvement of breeds of horses. In order to test the highest qualities and greatest power of this noble animal,

a race-course was established at Canton, near Baltimore, where fair trials of speed were honorably conducted, and every thing demoralizing was excluded. The first three days races commenced on the 22d October, the stakes amounting to $1750, but then, and for some years afterward, competitors came from other States to win the purses, until it became necessary to exclude all horses not owned in Maryland, or the adjacent District of Columbia. Mr. Skinner was always delighted to witness these trials of speed, though it was his boast as late as 1850, that he "never had any pecuniary interest in a horse-race or a cock-fight, nor ever played at any game of chance, or wagered a dollar *on any thing*. But that," said he, "has not kept me from knowing, in horses and dogs, or men and fowls, the true from the sham—nor from preferring the game to any other breed of fowls. With the latter as with the former, I believe the high-bred to be the best for every thing. It would be so in men, but there is not so much attainable certainty in or control over the blood! With equal dominion, a breed of men might be reared, that would naturally loathe the union of wealth and avarice; and intuitively or by nature despise equally and alike, ostentation and meanness."

Such was the success of the *American Farmer*, that other agricultural journals were established. The *Plough-Boy*, at Albany, was edited by Solomon Southwick, Esq., and the *New-England Farmer*, at Boston, by Thomas Green Fessenden, Esq., a gentleman of rare abilities; but they were necessarily local, and as a national agricultural journal, the *American Farmer* maintained its superiority. Mr. Skinner, who knew not what jealousy was, welcomed his co-laborers into the field which he had been the first to cultivate. In a private letter to Mr. Fessenden, he cordially expressed a desire "to strengthen his hand and to encourage his heart, in all efforts to extend the knowledge of discoveries in the science, and any improvements in the practice of agricultural and domestic economy."

But while Mr. Skinner sought with unremitting energy to gather vital matter for his journal, his "outside" labors were of equal importance. At one time we find him procuring from the Maryland Academy of Science, a report upon the fertilizing properties of marl—then the prime mover in arrangements for a cattle-show—then establishing an agricultural library, (through the aid of R. Oliver, Esq.,)—and never neglecting his postal or his editorial duties. Surely, if the gratitude of a nation is due to those gallant men who uphold abroad the starry emblem of our republic, and if such men are considered, by virtue of such service, worthy of national honor and reward, how much more worthy was he of both, who uplifted the national agriculture in the hour of its abasement, and with clarion call rallied the first men around the tottering foundation of our country's prosperity! From the State of Maryland, for which Mr. Skinner did so much, and whose resources he so largely aided in increasing, he received—the militia rank of Governor's Aid, with the title of colonel.

In July, 1824, Col. Skinner again sought in travel relaxation from severe labor, and visited the North, accompanied by his lady. [It was then a two-days' journey from Baltimore to New-York, costing $10.50; from New-York to Providence by steamboat, and thence to Boston, the fare was $14.50; and from New-York to Albany the fare was $4.] Col. Skinner understood the true philosophy of travelling, not rushing over the land like a telegraphic-message, but journeying leisurely along, and tarrying to examine the most interesting works of nature or of art. The Fairmount Water-Works—the Navy-Yard and Parmentier's Garden at Brooklyn—the Military Academy and ruins at West-Point—the Falls on the side of Cattskill Mountain—the

Erie Canal—and, to crown all, the glories of Niagara, were in turn examined by the truant from labor with enthusiastic delight. Returning by the way of Boston, he was, to use his own words, "presented by the honored Josiah Quincy to the celebrated 'Oakes' cow,' and to the venerable John Adams, the patriot who nominated George Washington as commander-in-chief of the revolutionary army."

Gen. La Fayette, on revisiting America, lost no time in assuring Col. Skinner that he entertained a particular regard for him, as the namesake of his old comrade, Col. Jack Stuart—a regard which soon ripened into a warm personal friendship. On the 7th of October, 1824, the "Nation's Guest" arrived at Baltimore, on his way to the great "Battle Celebration" at Yorktown, Virginia. He was received at Fort McHenry by Gov. Stevens, of Maryland, who introduced the old hero to the Society of Cincinnati, assembled under the marquee in which he had so often shared the frugal meals and aided the counsels of Washington. "This tent-scene," said Col. Skinner, "was impressive beyond description—this meeting of a venerable remnant of patriot warriors, in the head-quarters of their ever-glorious leader, to welcome his beloved ally, was one of the finest moral spectacles ever witnessed."

Among other tokens of public esteem received by Gen. La Fayette during a brief sojourn in Baltimore, was an address from a deputation of the Maryland Agricultural Society, in which they invited him to attend their exhibition. To meet his convenience the day was postponed, greatly to the satisfaction of the General, who declared that "of all the numerous gatherings to welcome him, none could be more congenial to his feelings than would be an assemblage of the farmers and the planters of the old Maryland line. As they took him by their hands, and exhibited the fruits of their agricultural and of their household industry, he could observe their semi-centennial progress under the free institutions for which he, shoulder to shoulder, had fought and conquered with their Fathers of the Revolution."

Great exertions were made to have a farmers' festival worthy of the occasion, and the display far exceeded any thing of the kind ever witnessed. Not less than fifty horses of superior quality, nearly one hundred neat cattle, with great numbers of excellent sheep and swine, so filled the pens that it became necessary to erect many more after the exhibition commenced. On the 20th of November, (the third day of the show,) General La Fayette arrived on the ground, escorted by an array of dignitaries from the adjacent States, with "an honorable and numerous body-guard of substantial sun-burnt farmers." An address was delivered by Gen. Harper, followed by the reports of the various committees. The fortunate competitors were then called in turn. "Coming forward, they passed through a large circle formed by the members, to receive the trophies of their industry and skill from the hands of the gallant, the disinterested soldier of liberty—the veteran companion of Washington, and the unvarying friend of America."

After the delivery of the premiums, the farmers on the ground, at the invitation of Col. Skinner, formed themselves into two lines, between which Gen. La Fayette passed, shaking each hardy hand with hearty grasp. A dinner followed, with a long array of toasts; after which, Gen. La Fayette visited the theatre, to witness the performance of the favorite play of General Washington—the "School for Scandal." When the point of the plot was developed, in the "screen scene," the illustrious visitor, with his suite, retired from the house, and went to the hospitable mansion of Col. Skinner. Here a gay and brilliant assemblage was congregated, and the host once told the writer that

he never felt more satisfaction than when filling his guest's tumbler from the premium pitcher, bearing a likeness of "Champion."

General La Fayette was so much pleased with Col. Skinner, that he selected him as agent to manage the 20,000 acre grant of land voted him by Congress, and located in Florida. This trust Col. Skinner retained through life, and performed with great fidelity, aided by his friend, Col. R. W. Williams, of Tallahassee. F. G. Skinner, Esq., the Colonel's eldest son and subsequent partner, was at school in France for four years, under Gen. La Fayette's paternal care, passing the vacations at La Grange.

In the autumn of 1824, the "Memoirs of the Pennsylvania Agricultural Society" were published, in a handsome, large volume, under the editorial supervision of Col. Skinner, who was selected by the society, "in proof of their respect for his exemplary fairness, his indefatigable zeal, and his singular ability." The work was expensively printed, and illustrated with costly engravings, through the liberality of John Hare Powell, Esq., of Powelton, near Philadelphia. It contains numerous articles in praise of the short-horned Durham cattle, a breed which Mr. Powell had imported and propagated, with some remarks showing the defects of the Norman, or Alderneys, the Devons, and the native breeds. This excited the ire of the venerable Timothy Pickering, at that time President of the Agricultural Society of Essex county, Mass., where he had a farm. He was no admirer of the Durham short-horns, and attacked Mr. Powell with such vehemence of invective as to call forth a scorching rejoinder. A regular paper war ensued, in which the champions of the various breeds entered the typographical arena, attacking each other in serried columns of—newspapers.

In December of the same year, Col. Skinner commenced the distribution of two barrels of guano, (brought to him from the Peruvian islands, by Midshipman Bland, in the Franklin,) and endeavored to call public attention to its astonishing fertilizing properties. Dr. Duchatel, at his request, furnished a chemical analysis of it, and he also published in the *American Farmer*, translations from Don Antonio de Ulloa, and Baron Humboldt, showing that it had fertilized the naturally sterile soil of Peru. But the planters either neglected the samples sent them, or used the precious fertilizer so injudiciously as to realize no good effects, leaving it for George Law, Esq., just twenty years afterward, to introduce it with triumphant success.

Soon after the commencement of the seventh volume of the *American Farmer*, the dispute on the relative excellence of various breeds of cattle was carried to such a length, that Col. Skinner found it necessary to close the controversy. Severe reflections and sarcastic personalities had been indulged in on both sides, and one gentleman from whom the journal had received many good offices and communications, withdrew his name from the subscription-list. "We care not," wrote Col. Skinner, "a farthing for the loss of one name, or one dozen, or ten dozen names, in comparison with the mortification of our journal being the cause of exciting any ill blood, or wounding any gentleman's feelings. The *American Farmer* was not projected with any regard to the politics, or merely to the number of patrons it might receive. We value the length of its subscription-list at a farthing rushlight, when put in competition with the satisfaction and the honor of dispensing, by the light of its columns, *solid and lasting benefit to the best interests and to the most virtuous class of society.*"

"Internal Improvements" was a conspicuous portion of the sub-title of the *American Farmer*, for Col. Skinner was early of opinion that cheap, and safe, and quick transportation, was indispensable to agricultural prosperity.

This department was profusely illustrated with engravings from English publications, giving thousands their first ideas of railways, locomotive-engines, etc. So sensible was the Maryland Society for Internal Improvement of his valuable exertions, that in April, 1825, they invited him to edit and publish a quarterly journal, intended to promote the execution of public works. After some deliberation he declined, fearing that the increase of literary labor would interfere with his duties as postmaster. "These," he said, "he has the satisfaction to believe are so executed as to give all possible security and satisfaction to the public; and it is only when that end is accomplished, he can venture to indulge in what constitutes his chief pleasure—the devotion of his leisure time and humble talents to studies and employment of solid utility to the country."

A few weeks later, Col. Skinner published a card, (which he requested his brother editors to copy,) soliciting some wild turkeys for Gen. La Fayette, who wished to introduce them at La Grange, and also a pair of opossums for a French naturalist. As might have been expected, there was a generous response. Turkeys came by the score, and Col. Skinner was soon forced to publish a second card, announcing that he had "received opossums enough to stock all Europe. One was left in the office of the *American Farmer*, very securely confined in a box, with her nine young ones, as large as middle-sized rats. In the night, taking her family in her pounch, she ascended the chimney of a three-story house, and made her escape!"

Appointed one of the "West-Point Board of Visitors," Col. Skinner left Baltimore on the day after the cattle show, and passed most of the month of June in attending the examination of the cadets. This visit was to him one of great pleasure and high intellectual interest, and he became intimately acquainted with his colleagues, among them Gov. Hamilton, of South-Carolina, Col. Eustis of the army, and the Hon. George Bancroft, then principal of a boy's school at Northampton. The Hon. Edward Everett, at that time professor of Greek literature at Cambridge, and member elect from that congressional district, was also a member of the Board, and was chosen Secretary. His valedictory to the graduating cadets was pronounced by Col. Skinner a fine specimen of chaste elocution, although rather cold in its effects, conveying the idea that the speaker was rather qualified, by the happiest use of great learning, to enlighten a select body—not to animate a popular assemblage. The Military Academy found great favor with Col. Skinner as a nursery for practical civil engineers, and he published his notes of the examinations on road-making, timber, and other useful matters, with expensive illustrations. While at West-Point, Col. Skinner was Chairman of the Committee on the Domestic Arrangements of the Institution, and conceived the idea of supplying the buildings with pure water from the adjacent mountain springs. After examining the localities, he made a report on the subject which his colleagues indorsed, and which induced Congress to make the requisite appropriations for the work. Col. Thayer was heard to declare that Col. Skinner was thus entitled to be enrolled among the greatest benefactors of the institution.

"Field sports" were now regularly spoken of in the *American Farmer*. "There is," wrote Col. Skinner, "a decided and growing taste for such amusements, and for discussions calculated to enhance the pleasures of those healthful diversions that necessarily conduct gentlemen from the bar-room and the gaming-table into the open air. It is, however, as we trust, well understood, that we would not inculcate a fondness for rural sports, to an extent that would involve the neglect of any man's cardinal duties. They

can not be too little estimated, who, whatever may be their fortunes, can pass their lives in listless idleness; doing nothing to benefit society, or to add to the stock of human comforts or human knowledge; lounging drones; *nati consumere fruges.* On the other hand, we hold that the greater the industry, and the more constant the application of our faculties to useful business, the greater the necessity for, and the benefit of, relaxation and amusement. That the best bow will lose its elasticity if never unstrung, every boy can understand; and even Scripture tells us—there is a time for all things."

Equally sound was Col. Skinner's argument, in refusing to publish a portion of a letter from the then Western States, criticising the religious principles of Mr. Owen. "It would be unfair," he wrote, "to admit an *impeachment*, and reject a *defense;* and were Mr. Owen to demand, as he might justly do, the right of explaining his doctrines, we should find our journal employed as the medium of controversy on a subject not at all connected with the objects of the *American Farmer.* For remarks upon the general state of any portion of the country, its productions, natural and artificial—the public works and private establishments connected with its agricultural interests, we are always obliged to our correspondents. But in religion or in politics, we never interfere in this place: let every man enjoy his opinions in the one and the other without 'let or hindrance.' Let him worship God in his own way, so he disturb not the peace of society, and at the polls vote his own ballot."

General La Fayette, after his return to La Grange, lost no time in opening a correspondence with Col. Skinner. His first letter, dated January 20th, 1826, commenced thus: "It is not an easy task for me to submit to the wide material separation which now exists between me and my American friends while my mind is constantly with them—and the regret for the loss of their society mingles with an ardent sympathy in their public and personal concerns. So prompt I have been in recovering pleasing habits, and so much attached I feel to my new as well as my old connections in the United States, that it seems to me quite strange to think this winter will pass without meeting any of you, either at Baltimore or Washington. No letter from you, my dear sir—no number of the *American Farmer* has been received. I am eagerly waiting for the papers and letters from my friends, and beg when you write to remember that at a distance minute particulars are very welcome."

The remainder of the letter chronicles the voyage and condition of the Devon stock presented by W. Patterson, Esq., the hogs presented by Col. Skinner, some wild turkeys, and other American gifts. A few months after its receipt, Col. Skinner forwarded to La Grange some desired wild turkeys, partridges or quails, terrapins and opossums, with a fine collection of the different varieties of Indian corn. In return, he received some valuable works on the culture of the mulberry and the rearing of silk-worms, in which he began to take a deep interest.

On the 30th of January, 1827, the House of Delegates of Maryland elected Col. Skinner a Director, on the part of the State, in the Bank of Baltimore. At the same session, the Baltimore and Ohio Railroad Company was incorporated, and the *American Farmer* zealously seconded their exertions. It was a gigantic undertaking, for railroads were then in their infancy. Millions were expended (as we have been informed) for excavation and embankment between Baltimore and Ellicott's Mills, simply to make the points of elevation and depression a few feet less, from the impression that no railroad could be tenable that was not nearly level. No one then dreamed that locomotives

could be constructed of sufficient power to encounter grades of seventy-five, and even ninety feet rise to the mile, with an immense weight of cars and merchandise attached.

In July, 1828, Col, Skinner visited New-York city, and inspected the principal gardens in the suburbs. He was especially delighted with the establishment of Monsieur Andrew Parmentier, a Belgian horticulturist, who had converted twenty-four acres of rocky pasture-land into a landscape garden, with a vine-yard, nurseries, and green-houses. We can but pause to regret the untimely death of this gifted foreigner, who did so much for the cause of horticulture while among us, and whose domestic virtues are yet enshrined in the hearts of those who enjoyed his society.

On the 20th of September, Col. Skinner was one of a large party who assembled at the manor-house of Charles Carroll, (the last surviving signer of the Declaration of Independence,) to congratulate him on the arrival of his ninety-second birthday. "Under other circumstances," wrote Col. Skinner, "it might well be supposed that a company so numerous, with so many resources for conversation and amusement, would break into groups and small circles—some to saunter through the fields and others through the large old garden to gather its delicious fruits, or pluck the flowers whose splendor and fragrance tempted on every side; that the book-worm would steal from the gay circle to pore over some precious volume of ancient lore; and yet more surely that grace and beauty would attract the regards of all who had an eye to admire and and a heart to feel. But on this occasion all other objects seemed to lose their power of attraction, and the 'old gentleman' to fill all eyes and all hearts. Those who were not engaging him in conversation were remarking upon his healthful appearance, his activity, his cheerfulness, the purity of his conversation and morals, his early and constant patriotism, the pregnant events of his life, and the pleasure he must have in the power to draw upon such a boundless store of interesting recollections. In short, so completely does he engross on his birth-day the admiration of his guests, that it seems as if each one had come with the pallet or the pen, to take his portrait, or to write the memorabilia of his early days, while yet and from him alone they may be had."

On the 13th of March, 1829, Col. Skinner published the last number of the tenth volume of the *American Farmer*, then in a flourishing condition, having received within the year just expired an accession of nearly "three hundred subscribers, coming from every State in the Union." Conceived in a laudable desire to do good—conducted with a view to the promotion of national prosperity—dedicated to the interests of a hitherto neglected majority of citizens, the periodical established as an experiment had become a "fixed fact," commanding universal admiration. The pioneer editor, by unflagging industry, had now reared ten monuments upon the broad area of industrial improvement, each volume bearing tokens of his ability, his energy, and his patriotism, as indelible as they were distinct. A score of other agricultural journals had sprung into existence, but the *American Farmer* retained its superiority, ever holding forth a beacon-light to imitators. Let it ever be remembered that Col. Skinner's was "the first voice that was heard claiming for agriculture its rights as a science. His light gleamed alone, but brightly and steadily, amid the dark mists of ignorance and prejudice; and even now—now when the land is illuminated by a thousand—that same torch, in other hands, is burning and blazing with a pure and brilliant flame."

At that time, there was scarcely an agricultural or horticultural society in

Christendom, of which Col. Skinner was not an honorary member, and these indorsements of his labors were to him a source of self-gratulation. The London Horticultural Society had only conferred the same honor on two other Americans, De Witt Clinton and Judge Buel, and with the diploma of the South-Carolina Agricultural Society came its large medal, made, by express vote, of native gold. But he soon transferred his labors to another field.

"The want of a repository in this country, like the English *Sporting Magazine*," (we give Col. Skinner's own words,) "to serve as an authentic record of the performances and pedigrees of the *bred* horse, was admitted by all, whether breeders, owners, or amateurs of that admirable animal. To supply this want a *Turf Register* was made the basis of a periodical work, giving the pedigrees and the performances of American thorough-bred horses. It was also designed as a *Magazine* of information on veterinary subjects generally, and of various rural sports, as racing, shooting, hunting, fishing, trotting matches, etc., together with original sketches of the natural history and habits of American game of all kinds."

The first number of the *American Turf Register and Sporting Magazine* appeared in August, 1829. It was a neatly-printed pamphlet, containing fifty pages, and was embellished with an ornamental cover and engravings of game, designed by the ill-fated Rindisbacher. Like the *American Farmer*, it entered an untrodden path of periodical literature, without a single subscriber. But although the price was $5 per annum, it soon had a large list of patrons, and was deservedly popular. So great was the interest which it excited, that horses whose pedigrees it established rose in value from $100 to $5000 and $10,000, and a committee of Turfmen presented the editor with a costly service of silver dinner-plate.

Enthusiastically devoted to field sports, Col. Skinner was so much interested in the *Turf Register* that he was induced to dispose of the *American Farmer* for $20,000. It was purchased, (if we are not mistaken,) by Mr. Hitchcock, and was edited by Gideon B. Smith, Esq., but again changed hands before it came into the possession of Samuel Sands, Esq., who now conducts it with marked ability and industry.

Col. Skinner maintained his devotion to agricultural and mechanical progress, using his "franking privilege" for the purpose of disseminating plants and seeds. The "silk culture" received his especial attention, and his friend General La Fayette supplied him with the latest French works upon this then exciting question.

President Jackson, the "Farmer of the Hermitage," was a subscriber to, and constant reader of, Col. Skinner's periodicals, and was ever well pleased to see him at the "White House." As we have previously remarked, he re-nominated him as postmaster at Baltimore, and he also reäppointed him one of the "West-Point Board of Visitors."

The *Turf Register* continued to win golden opinions; indeed, Col. Skinner's editorial career afforded proof that "independence" is the motto for a "sanctum;" whoever speaks the truth out of a sound heart is sure to find an echo in public opinion. Neither did he mislead his readers by interested recommendations of new tools, seeds, or medicines, written by the vendors thereof, and at one time, he even refused to publish such matter among his advertisements. Subsequently, he sold the *Turf Register* for $10,000 to Mr. Pegram, of Petersburgh, Va., who afterwards sold it to Mr. Robert Gilmore, Jr., of Baltimore, and he to that "Tall Son of York," Mr. Porter. The last-named gentleman was a particular favorite with Col. Skinner, who once "heartily wished that his success may equal his '*Spirit*'—may he

never be at a loss for the where and the wherewithal, to wet his line and his —whistle; and may he never throw fly, without hooking a trout." So say we all of us.

After having thus severed his editorial connections, Col. Skinner at different times prepared valuable foreign works for the press, enriching them with such notes as his experience suggested, to adapt them for American use. Prominent among these works are "Youatt on the Horse," "Mason's Farrier," "The Sportsman and the Dog," "Improved Cattle Doctor," (and in the Farmer's Library,) "Petzhold's Lectures on Agricultural Chemistry," "Von Thaer's Principles of Agriculture," and "Stephen's Book of the Farm." The English editions of the three last-named works cost $42. Col. Skinner's annotated American editions were sold at $5.

In 1837, Mr. Van Buren's administration commenced, and Col. Skinner, who had never been a politician, was summarily removed from the Baltimore post-office. Naturally wishing to increase the property upon which his family were dependent, he entered into an association with some gentlemen for the purchase of land on speculation, and visited the south-west to invest their joint funds. Business tact, however, was not among Col. Skinner's qualifications, and falling into the hands of shrewd land-dealers, he was sadly deceived in his purchases. Some investments in the silk culture were equally unprofitable, and the next year found him involved in a sweeping financial catastrophe. By no fault of his, unless over-confidence in others be a fault, he was deprived of the fruits of his long labors; but the change of fortune called forth no lamentations, no bitterness of spirit. Nay, the thunder-stroke of poverty only called forth the true nobility of his soul—the true dignity of his character. Others might have sunk, prostrated by the blow, but Col. Skinner went manfully to work. Editing agricultural works for publication, writing articles for the *American Farmer*, and acting as agent for the sale of lands, he occupied, and that with profit, all of his time.

There was another change of administration, and Gen. Harrison had not been in the White House a week, before Col. Skinner was appointed third assistant Postmaster-General, an important office. Entering upon its manifold duties with zealous application, he soon mastered every detail, nor was any one ever heard to complain that Col. Skinner had treated his case superficially, or with an imperfect intelligence of its merits. A simple perusal of the papers relating to any contract, enabled him to form the soundest judgment of its merits, and he curtailed the expenditure of his Bureau $200,000. So unremitting was his industry, that the close confinement brought on fits of giddiness in the head, which suddenly destroyed his hearing. Fortunately his other faculties remained entire; there was not, on his recovery, the slightest intimation of any diminished vigor of mind, and he was not only able to continue the discharge of his official duties, but to enjoy the society of his friends, and to solace himself with his ever-cherished agricultural literature.

In March, 1845, Mr. Polk ascended the Presidential chair, and the first officer removed by Cave Johnson, Postmaster-General, was Col. Skinner. Not a whit daunted, he soon set out for New-York, in search of a new field of labor. "He found himself," to use his own words, "having passed from the green twig to the hard wood, and now, as he was entering into the 'sear and yellow leaf' of life, dependent more than ever upon the fruits of his daily labor for subsistence."

He was not long idle. Messrs. Greeley and McElrath, the enterprising publishers of the *New-York Tribune*, soon engaged him to project and edit

a periodical work to be called the *Farmer's Library and Monthly Journal of Agriculture*, for which they gave him *carte blanche*. It was accordingly commenced in July, 1845, in a beautiful typographical garb, with costly engravings, and was in every way worthy of the art which it sustained. In the first half of each monthly number was a portion of some standard work, generally reprints of costly foreign publications; the remaining fifty pages wer edevoted to foreign and domestic agriculture, with accounts of experiments, improved processes, new inventions, etc., forming the amplest and the most comprehensive periodical ever devoted to the producing interests.

In September, 1845, Col. Skinner visited Massachusetts, to attend a trial of sub-soil ploughs at "Indian Hill Farm," then the residence of the writer's father, who has since departed this life to join his old agricultural friend in another world. Among the guests was the Hon. Isaac Hill, also justly distinguished as an agricultural journalist, with some three hundred others, as the invitations read, of "all occupations, politics, and religions." Surrounded by practical yeomen, the veteran "American farmer" was in his element, seasoning sound counsel with many a pleasant reminiscence, and "the sensible old editor with the queer ear-trumpet" is yet spoken of with admiration at the surrounding firesides.

A visit to Canada, with his family, recruited Col. Skinner's drooping health in the summer of 1846, and both at Montreal and Quebec he found that his reputation had preceded him, securing hospitable attention. With Niagara Falls he was delighted, and we regret that we can not copy his remarks to a friend on their sublime grandeur; "to describe them," he wrote, "would require the hand of Omnipotence itself, with a pen of light." The next winter, he visited his second son at New-Orleans, (who died shortly afterwards,) and was honored with a public dinner, as a national benefactor.

In October, 1847, Col. Skinner visited Massachusetts, and was taken by Sam. Lawrence, Esq., to visit the new city bearing his name, on the banks of the Merrimac. What three years previous was a naked, sandy plain, had become a youthful Lowell, magically created by the power of New-England industry, and the energy of New-England talent. Already the largest woolen factory in the world, two huge cotton-mills, a spacious machine-shop, and an iron foundry, were in active operation, and there were churches, hotels, school-houses, gas-works, newspaper printing-offices, a bank, town-house, etc., besides private dwellings and stores well filled with goods. The population numbered upwards of 8000, and the rise in the value of farms, for miles around, bore ample testimony to Col. Skinner's favorite maxim: "The plough profits by the successes of the anvil and the loom."

During Col. Skinner's visit to New-England, he was advised by his numerous friends there to carry into effect a suggestion originally made by Henry C. Carey, Esq., of Philadelphia, and establish a new periodical of his own. The *Farmer's Library*, costing as it did $5 per annum to each subscriber, was too expensive, and probably of too elevated a character to become popular or profitable. When, therefore, his three years' agreement with its liberal publishers had expired, Col. Skinner purchased the good will of the establishment, and removed it to Philadelphia. To indicate its comprehensive aims, he called his new publication *The Plough, the Loom, and the Anvil*, and offered it at a barely remunerative price. Launching this new barque of his hopes upon the uncertain sea of public patronage, he called to his aid a stanch crew, and pursued his course with rejuvenated vigor, guided by the pole-star of his thoughts, the prosperous coöperation of home industrial pursuits.

The reäppearance of Col. Skinner as editor, was greeted with approving compliments by a large portion of the American press. His services as conductor of the *American Farmer* were held in grateful remembrance, and a wide circulation had been given to extensively-copied articles since furnished by him to the *New-York Albion* and the *Philadelphia Courier*. Especially were they delighted with the energy with which he "commenced business" at the age of three-score past, saying, with manly frankness, "Exposed again and again to trying difficulties, I have never allowed myself to despair, being always conscious of a *willingness to work*—and you will sooner aid than censure a man who, if he must fail, would have it in his power to say, that it was not for want of every honest effort to succeed."

Such a man could not "fail"—there was not (as Napoleon said of the word impossible) such an expression in his vocabulary. After a few numbers had been published, "subscribers began to come in daily at the rate of 600 a month," and the first men in the land had lost no time in encouraging his efforts. Among these commendatory letters was one from the "Hero of Buena-Vista," dated "Baton-Rouge, July 23d, 1848," in which he said: "The subject is one to which I have devoted much of my life, and in which I yet continue to take the deepest interest; and in reading the periodical from month to month, which I shall continue to do with great attention, I feel that I shall become largely your debtor for the pleasure and instruction which I shall derive from it. That your important undertaking may meet with every success, is my earnest hope and desire."

It may not be amiss here to state that when General Taylor became President, he directed the appointment of Col. Skinner's eldest son and partner, as "Chief of the Agricultural Bureau" of the Patent-Office. In collecting and arranging materials for the Annual Report, Mr. F. S. Skinner proved himself worthy and well qualified to "follow in the footsteps of his illustrious predecessor." One of his published works, a translation from the French of "The Elements of Agriculture," is pronounced by competent judges to be the best text-book in the English language for those who wish to commence the study of agriculture as a science.

As the new periodical was published monthly, Col. Skinner was enabled to accept some of the many invitations sent him to attend agricultural festivals. That held by his old friends of the Maryland Agricultural Society in 1848, (when they turned over a new leaf,) was to him a source of great delight, and he was loud in his praises of Mr. President Calvert, as one "of whom it could not be said that he pointed the way, but did not go in it himself." From Baltimore, he made—to use his own words—"a long-intended flying visit to the good old Eastern Shore of Maryland—the land of good hominy, good oysters, good ducks, good mutton, good men, and what is more—*gentlemen!*"

In August, 1849, Col. Skinner again visited New-England, accompanied by the ladies of his family, and received many attentions from his numerous friends. Returning to Philadelphia in time to "get out" his September number, he then attended the Montgomery County (Md.) Fair, and on the 6th of October delivered an address before the Bucks County (Pa.) Agricultural Society. It was an able elaboration of his favorite theme, urging the enactment of a policy that would draw the prosperous consumers employed in other industries, close around the plough and the harrow.

The next year, Col. Skinner was invited by the "Massachusetts Charitable Mechanics' Association," to deliver the address at their triennial exhibition of domestic manufactures. On his way, he tarried at the New-York State

Fair, where he unexpectedly met a grandson of his old friend, General La Fayette, who accompanied him to Boston. The address, which was delivered before a crowded audience in the hall of the "Lowell Institute," was sound and practical, as he intended it should be, judging from this introductory sentence: "As the philosophy, the beneficence, and the moral beauty of your admirable association, have been so well illustrated on previous occasions, even by an Everett and other sons of Massachusetts, eminent for their learning, patriotism, and rhetoric—may I not hope that you will now listen with kind forbearance to a very plain discourse; in which it shall be my endeavor, without disguise and without ornament, to show, that if all our great branches of industry be not in fact identical, they are yet so blended, and so necessary to each other, that whatever acts or policy shall pollute the fountain of the one, must necessarily impair the healthful action and flow of all the others. So truly may the Plough say of the Loom and the Ship, 'This is bone of my bones, and flesh of my flesh,' so near is their relationship, that, in my judgment, it is impossible freely and fairly to advocate the prosperity of one, without pleading the cause of them all."

Before leaving New-England, Col. Skinner was an honored guest at the Fair of the Norfolk County (Mass.) Agricultural Society at Dedham—at that of the Essex County Agricultural Society at Salem—and at several of those horticultural exhibitions which, to use his own language, "at that season of the falling-leaf, contribute so much to bring out the ripe fruits and fair flowers in and around the goodly city of Boston." He was also induced to visit New-Bedford, Clinton, Lowell, Concord, and other towns, and everywhere received many tokens of respect.

Returning to his editorial chair, Col. Skinner hailed the advent of the year 1851 with uncommon gladness. From the good offices of friends, and the gratuitous assistance of able correspondents, *The Plough, the Loom, and the Anvil* was not only able "to walk along, but to move ahead in the strength of its own good purpose." During the year just past, he had added not less than one thousand names to his list of subscribers, and had in addition received cheering assurance that the cherished creation of his ripened intellect would receive a still larger accession of patronage in the year to come. Among others who took a warm interest in its success, were twenty members of Congress, from different States and sections, who signed a circular, recommending the periodical "to the patronage of all who desire to see American Industry fairly protected in the development of our own resources, and the working up of our own materials."

In February, Col. Skinner took his wife to Washington, on a visit to their son, and, as they returned to Philadelphia, they tarried at Baltimore, guests of her mother, the late Mrs. Davies. Surrounded by old friends, who had long esteemed him for his social qualities, his unassuming demeanor, and his generous impulses, the veteran was naturally in high spirits. Little thought he that "the silver cord was soon to be loosed," and oh! how suddenly.

On the morning of the 21st of March, 1851, Col. Skinner left his wife, saying as he went, "I am in better health and feel more like myself than I have for years." After making several calls, he stepped into the interior of the post-office, to get his letters and papers. On one side of the office there are two doors, side by side, one leading into North street, and the other into a cellar-way. When Col. Skinner first started to go out, he partially opened the door leading into the street—then, saying "I have forgotten some papers," he returned into the postmaster's private room. Finding what he

sought, and observing that his dinner hour was near at hand, he hurried away—unfortunately mistook the door—opened the wrong one, to which there was not even a sill—and at the first step was precipitated to the bottom of the cellar, making a complete summerset as he fell, and fracturing his skull upon a large stone at the foot of the ladder. The clerks and carriers (one of whom saw him open the wrong door, but had not time to warn him of the mistake before he fell) immediately ran to his assistance, and found him speechless. They carried him into the postmaster's room, and called in a number of physicians, among whom were Drs. Butler, Riley, and McKenzie, who did every thing that the best medical science could suggest; but his skull was found to be badly fractured at the base, and his injuries of such a character as to leave no hope of his surviving.

His afflicted wife found him who for so many years had been all in all to her, lying upon the floor, with his life-blood pouring from his ears, and groaning in his insensible agony. Placed upon a cot, he seemed easier, and although he had lost the faculty of speech, he indicated by disjointed expressions, a consciousness of approaching dissolution, with a firm reliance in the mercy of God. At length, about seven o'clock, he clasped the hand of his faithful nurse, who was wiping away the blood flowing from his nostrils, and faintly exclaimed: "My God! Trouble will soon be over." Then, falling into a tranquil slumber, his spirit passed away without a struggle or a groan.

And thus, in the full enjoyment of health, ripe in years and in honors, was snatched away this true-hearted citizen. Who that gazes on his portrait prefixed to this sketch, can avoid feeling the acutest regret at his sudden and sad death? As we recall him to mind, he was a muscular, well-formed man, possessing the dignified manners of the old school, without its formal stiffness. There was a mingled kindness and penetration in his look, his eye was full and intelligent, and when engaged in conversation, his countenance would lighten up with the clear blaze of intellectual expression. Who that knew him will not echo, from the heart, this eulogium of Joseph Gales, Esq., the respected senior editor of the *National Intelligencer*? "We have personally known Col. Skinner intimately, in prosperity and adversity, and in every relation of life, and are able to bear testimony to his integrity, his honor, his kindness of heart, his attachment to his friends, and his devotion to his family—in which relations, composing as a whole his character, we only express our conscientious belief when we say, that in all these essentials he was entitled to a place in the first rank of humanity."

Our simple simple task is achieved. We have diligently endeavored to pay our tribute of gratitude to this great, good, and eminently useful citizen—whose works were an honor to him while he was living, and are his only monument, until a votive tablet recording his services shall grace the national column now being erected in honor of the immortal Washington! The news of his untimely death created the most profound sorrow, but his victories had been those of peace, and there has been (until the present movement was started) no provision for the beloved comrade of his thirty years' campaign. This was wrong! The American people, so enriched by his long labors, owe her a generous maintenance, and we hope that by pecuniary oblation, as well as by monumental stone, his memory will be substantially honored by all who are interested in the joint successes of "the Plough, the Loom, and the Anvil"—[See also page 54.]

ILLINOIS MARBLE.

THE geological survey of this State, says the *Prairie Farmer*, under the charge of Dr. Norwood, has brought to light several sources of wealth and luxury not before known to exist. Among others, are several deposits of marble of different colors, and suited to different uses. Among these, according to the *Alton Courier*, is a variegated variety, suitable for any description of in-door and ornamental work, as mantels, table-tops, etc. It is from Southern Illinois, and will compare favorably with most of the imported marbles used for such purposes. It resembles, most nearly, some varieties of Egyptian marble.

Two pieces of black marble, which, for beauty, depth of color, and high polish, are not excelled by any specimens of the famous Irish black marble that have come under our notice, and which is so much used for mantel-tops and similar purposes, are also from Southern Illinois.

A light-colored, nearly white, marble, from the vicinity of Thebes, appears to be one among the best rocks we have met with for almost every purpose of in and out-door work. It is very nearly pure carbonate of lime, sub-crystalline, very compact, and admits of a fine polish. No Western rock equal to it, in every requisite for building purposes, has yet, so far as we know, been placed in any public or private structure in the West, except, perhaps, in a single building in Chicago. We understand the quarries are inexhaustible, and that they are contiguous to navigation.

A beautiful oolitic marble, from Hardin County, receives a fine polish, and appears to be harder, and better able to stand the effects of the weather, than a similar rock from St. Genevieve, Missouri, which has been used to some extent in St. Louis. The structure of this rock is as curious as the wrought samples are beautiful. It can be worked with great ease into any desired form.

A specimen of marble-conglomerate, from Pike County, is one of the most beautiful ornamental rocks we have met with in the West. It more nearly resembles the "Potomac marble" used in the pillars of the Capitol at Washington, than any other rock. It appears to be quite as durable and takes as fine a polish as the Potomac rock, but owing to the grave colors of the pebbles of which it is made up, does not present so brilliant an appearance. It is very compact, and the cement appears to be very strong.

FLAX.—THE FALL-RIVER COMPANY.

A LINEN COMPANY, organized at Fall River, Mass., as a means of inducing farmers to engage in the flax-culture, offer to buy the lint on certain specified conditions. Their wishes will be understood by an extract from their circular. They say: "We propose, in order to give the grower an idea of our wants, to deposit with well-known parties in each State, adequate samples of the flax-fibre grown in our own and other countries, and imported by us within the past few months, and to affix to each sample the cash price we paid for those qualities when laid down in New-York, adding the charges for commissions, freight-duties, exchange, and other expenses. We will then

bind ourselves to pay for twelve months from this date, the same prices in cash for all the flax-fibre, of equal qualities to the samples so deposited, which may be prepared and forwarded to New-York by Western parties; or to pay such prices, less the freight and other charges to New-York, on all flax so delivered to our agents in Louisville, Cincinnati, or Chicago.

By this means the Western farmer will secure to himself not only the profits which have been found sufficient to remunerate the European cultivator, but the many charges to which such articles are subject in the transit; and also may, with proper management, obtain a larger amount of flax-seed per acre than he now realizes. And we fully believe that after having been induced by the above extraordinary offer to try the experiment fairly for one year, he will find flax to be the most profitable crop that he can turn his attention to.

We propose taking the flax at *some rate*, unless it should fall too far below the sample furnished, to be of any advantage for us to manufacture. We wish all the flax either pulled or cut with a cradle so carefully as to preserve the stalk uninjured and the ends even; the seed taken off by a rippling-comb, or by passing the heads of the stalk through rollers, so as to avoid the present effects of threshing; the flax to be water-rotted and scutched; to be sent in bales and packages, so as to be all ready for heckling on reaching our mill."

Walter Paine, at Fall River, is the agent of this company.

WATER-ROTTED HEMP.

THE proper time for sowing the crop varies with the different seasons, but as a general remark, from the 25th April to the 15th May will be found best. Earlier than this the hemp is apt to be short; later, the quality of the lint inferior. The earlier sowing should be upon strong land, the later upon that which is more reduced. It has for some years past been the practice among farmers to save large portions of their seed from hemp that was intended for a crop of lint; but, failing to do this, the seed was permitted to ripen and preserved for sowing the next season. From this and other causes affecting most plants not natives of a country, I am of opinion that our hemp-seed has deteriorated, and that we need not expect generally to make good crops of good quality until our seed is renewed. Imperfect seed must necessarily produce unhealthy plants. You would confer a favor upon hemp-growers by procuring through the Navy Department, for distribution, some foreign seed, either Russian or Italian, the former to be preferred.

I shall now proceed to the second division of the subject, the preparation of hemp for naval purposes.

This portion of the subject must necessarily commence with the harvesting of the crop. I will here remark that he who would be successful in the prosecution of this business, must be untiring in his attention to his laborers in every successive step; every thing must be done well; no carelessness, no slovenly handling of the hemp is admissible. A good article and a good yield is the object; this can not be obtained but by unceasing attention. It all comes easy enough when laborers are taught and required to do their work well, nor does it retard, to any extent, the quantity of work to be done.

In cutting the crop, especial care must be paid to keeping the straw straight; no straw should be allowed to be broken, doubled, or crossed in the bundle. The hemp has to be hackled, and all tangled fibres will necessarily be taken out by this process, nor will the loss stop at this; these fibres will entangle others, which will also be lost; some loss is unavoidable, but by care much may be prevented. It is equally important that each hand of hemp, as it is cut, should be carefully butted before it is spread down by the cutter; no laborer should ever, in any handling of the hemp, be permitted to pass a bundle out of his hands without first lightly tapping its butt on the ground.

If this is not attended to, there will be unnecessary waste in heckling. As it is one of the reasons for my desire to impress the importance of keeping the bundle square at the root, I will here state, that when a stack of hemp is held by its roots' end, there is in the hand of the person the end of every fibre of lint that is upon it, and that the fibres successively run out from the first to the last pair of leaves. To exemplify: Take a hand of hemp and heckle it; if the root-end of the fibres has been permitted to become uneven, as is almost universally found in dew-rotted hemp, it must be grasped near its middle, so as to have in the hands of the operator the end of all the fibres; throw the top end into the heckle and clear it of tow, and it will be found that, except the tangled fibres taken out, there is but little waste; reverse the hand and heckle the other end, the result will be that near two thirds of the weight of the hand of hemp has been lost in this latter part of the operation. If the same hand of hemp had been perfectly handled in all the different operations through which it had to pass, the loss in tow would have been less than one half, probably not more than one third. You, sir, may think that I am too tedious in these apparently minor matters, but permit me to say that my observation has shown them to be of paramount importance. I wish to impress the importance of doing this work well. But to return: the hemp when cut, should be spread evenly and as thinly over the ground as practicable, and so soon as sufficiently cured, put into stacks near the place where it is to be rotted.

Rain and heavy dews will, after the hemp has commenced to cure, injure its color and quality. To obviate this, when the weather is unfavorable, it is a good plan to set up in shocks, without being bound up in bundles, all hemp of a suitable quality that has been exposed to the sun for twenty-four hours. It should be permitted to cure well in the shock before being bound into bundles and stacked. In this way it will cure bright and retain a greenish appearance. If the outside of the shocks have become darkened by exposure to bad weather, the dark hemp may be stripped off and secured for dew-rotting. I practised this plan when engaged in this business, and found it to be a good one, affording an excellent opportunity, when my hemp was uneven, of selecting such as was suitable for water-rotting, the balance being left on the ground to cure for dew-rotting. The most suitable length of hemp for the purpose in view, is from six to eight feet; something longer will do if it is not too coarse; and something shorter, if the crop stands well on the ground and is not grassy or weedy. The proper time for cutting hemp is at any time after the dust (pollen) of the blossom-hemp has commenced to blow off, until these stalks commence to die; if not cut by this time, the first rain will darken the dead straw and materially injure the quality of the crop.

The best period for water-rotting hemp is from the 1st of September until Christmas; by this time, if practicable, the crop should be rotted. The process of rotting goes on slowly in the winter months. I have had hemp put into the vats the week before Christmas, which had to remain in the

water until the latter part of February before it was in a condition to be taken out. The time required for the hemp to remain in the vat varies with the temperature of the water; in the month of September it will rot in from five to eight days; in October from seven to ten; in November from ten to fourteen; in December from fourteen to twenty-one; in January from four to seven weeks. This of course is but an approximation to the time required, the temperature of the weather governing it. This may be readily understood when we know that, in rotting hemp by this process, putrefactive fermentation to a greater or less extent has to be set up, and this is readily accomplished at a temperature of from 60° to 100°, but is slow in being established between 32° and 60°.

I am of the opinion that it is very sparingly soluble at a temperature between the freezing point, and that we must mainly rely upon the establishment of putrefactive fermentation. Whatever means, either artificial or natural, that will keep the water in which the hemp is immersed at a temperature between 60° and 100° of Fahrenheit, is the best calculated to facilitate the rotting process, and my observation justifies me in saying that hemp rotted in the fall months is of better quality than that rotted in winter.

In selecting a site for water-rotting hemp, some attention should be given to the supply and quality of water, the amount of head that can be obtained, and the facility of drainage of the vat. The quantity of water required will, of course, depend upon the size of the vat. The quality of the water refers only to its purity. The vat should be located as near a bold spring as practicable, so as to insure a supply of *clear* water—muddy water is very destructive to the quality of the hemp, rotting it unevenly, making it towy, and coloring it. Large branches that are subject to floods from heavy rains are not suitable, as the water for several days in succession at these periods will be muddy, and the vats liable to overflow. Before making a vat, the situation should be carefully examined with a level, for the purpose of ascertaining what head of water can be had and the facility for drainage. There should always be sufficient head of water to fill the vat when the hemp is in it, unless the fountain be a very bold one. There are periods when the vat is to be emptied of water, and, for the sake of comfort, the drainage should be perfect. The location being selected, the size of the vat or vats will depend on the supply of water, quantity of work to be done, and the fancy of the owner. I will here give the size and manner of construction of my vat, and the quantity of work that can be done with it. Length 116 feet, width 16, depth 4 feet, excavated in the clay. For the purpose of keeping the hemp under water, I have 13 sills of 20 feet in length, 10 inches wide, and 6 inches thick, let into the bottom of the vat, across it, commencing with one near each end, and the others placed at equal distances apart. Two feet from each end of the sills, I have two upright pieces of timber. 3 inches thick, 6 wide, and 6½ feet long, dove-tailed into the sides of the sills, and then pinned fast; these uprights should stand at right angles with the sills, and parallel with each other, and 4 to 5 inches apart, at the distance of 4 feet 8 inches from the top of the sill; each upright has a mortice, cut 3 inches long and 1½ inches wide, for the purpose of receiving a key or cross-piece, under which the lines are placed which are to hold the hemp under the water. The distance between the uprights at each end of the sill is 16 feet; the keys through the uprights upon one side of the vat should be made fast, upon the other side left loose, so as to be put in over the lever when it is brought in place. The sills with their appendages being put in place, the vat should be built up with a heavy stone

wall, which should come out even with the inner edge of the uprights; the wall should be 4 feet high and flagged at the top.

At the bottom of the wall upon the end of each sill should be placed a long, wide, and strong rock, and care be taken in building the wall to throw as much of its weight as possible on each end of each sill. Hemp is very buoyant for two or three days after letting the water on it, and too much attention can not be given to making every thing secure.

A place must be arranged at the bottom of the vat at the point of drainage, to carry off the water when desired; and another at the point of supply, to bring it in at the top of the vat; common wooden pipes answer for this purpose very well. The drainage must be so arranged as to be capable of being made water-tight; nearly every person will possess mechanical ingenuity sufficient for this. Thirteen levers, 18 feet long and a foot in diameter, at their centre, of strong timber, with each end dressed a little over a foot, so as to pass in between the uprights for the purpose of holding down the hemp, complete the structure of the vat or pool. A vat of the dimensions just given, will hold enough of hemp in the straw, at one filling, to make about two tons of hemp from the brake, and in one season to water from fifteen to twenty tons.

Various modifications of the plan here given may be made; the vat, for instance, may be only half the depth, or half the width, etc. Various modes also may be arranged to keep the hemp under water while rotting; but whatever plan may be adopted, be sure that every thing is strong. We are now prepared to commence the process of water-rotting. The best plan for arranging the hemp-straw for this operation, is to make up twenty-five or thirty bundles into a bale seven or eight feet long, and bind it round in three places with bands made with brake or other tow. These bales can be made very firm by having a frame of proper length, depth, and width provided for putting them up; when the box or frame is filled with the straw, a lever is applied to press it solid, and the bale is tied with the bands. This is a very simple contrivance, and about as speedy as any other mode of getting the hemp into the pool. These bales should not be over two feet square, and eight feet long; they may be placed in the vat as fast as they are made. If the bottom of the vat is muddy, a few small rails should be placed in it to keep the hemp clean. The bales should be placed in the vats in two tiers, two bales deep from one end to the other; two tiers of bales eight feet long will just fill across the vat. If they are shorter, press the end of the bales well up to the walls on each side, and any vacancy that may be, let it be down the middle of the vat. Hemp over eight feet in length should be reduced to this length by chopping off sufficient of the end.

The hemp being in place in the vat, the arrangement for fastening it down comes next. Upon each tier of bales, from one end of the vat to the other, is laid a line of four strong rails, so placed that when the levers are put in place, each end of each rail should be firmly held down by them, and the rails so distributed along the length of the bale as to hold down all its parts equally. Now the levers are placed in their situation, the key put in over them, and the water let on. The water may be permitted to run into the vat in a full stream until it is three fourths full, then reduce the supply to such an extent as that the hemp may be completely immersed in from twenty-four to thirty-six hours. It will be well, in the time occupied in covering the hemp with water, to be sure that at night the supply is not too rapid. Hemp, when first put into the water, is very buoyant, and remains so until the water expels the air from the cavity of the straw, and unless some attention be paid to this, it will

severely test the strength of your arrangements, and often cause much vexation and trouble. After the pool is filled with water, the supply of it should be so regulated as only to have as much running in as will supply the leakage—a redundance of water retards the process. Keep the hemp completely under water until it is ready for removal from the vat.

It is very difficult to point out with sufficient clearness any test by which it may be known when the hemp is sufficiently watered; this only can be learned by close observation. Make it a rule never to over-rot; hemp overdone is unfit for naval purposes. If it is not sufficiently rotted for breaking, it may be exposed to the weather, as in dew-rotting, until it is. After the coloring matter is extracted by the water, exposure to the weather will not materially injure the color. When the hemp has been covered with water for about the shortest period noted for the different months, commence to examine it by drawing out a few straws from some bale as deep under water as it can be got; if sufficiently watered, its odor is unpleasant, the lint slimy and easily separated from the wood, the leaves in a state of decay, and the wood, in attempting to bend the stalk, will break off short. When too tough to snap off tolerably freely, it is not done. As a further test, dry as speedily as practicable a small quantity, and test as in dew-rotting.

In applying this latter test, do not expect to find the wood break or the lint to separate as freely as in dew-rotted hemp. It is best always to bring the hemp as near as possible to the right state in water. Nearly any person, after a little experience, will be enabled readily to determine when it is fit for removal from the vat. This point being determined, a sufficiency of water is drawn off to loosen the levers, which are then removed, the rails on top of the hemp thrown off, and the pool again filled with water. A revolving crane, with a geared windlass attached, rigged with a stout rope, to the end of which strong iron arms are affixed, for the purpose of receiving the floating bales of hemp, is an admirable contrivance for removing the bales from the vat to the cart. The iron arms are sunk sufficiently in the water to receive a bale of hemp, two stout hands, by the windlass, hoist it high enough to be swung round over the cart, and loaded across the top of a strong frame-bed. Two of these bales are a sufficient load for a yoke of steers, and two carts will remove the hemp from a vat, such as described, in a little over one day's time, provided the place of drying be not far from the vat. There should be convenient to the place of operation, six or eight acres of sod-land, upon which to spread the hemp to dry, or to finish the rotting process when necessary. It is removed to this piece of ground by the carts; the bales tilted therefrom, and allowed to drain for a few hours; the bands then removed, so the bales may fall apart, which, if not sufficient to allow the bundles to drain well, they must be separated by hand. When the bundles are sufficiently drained to allow handling without breaking or tangling the straw, they should be spread out to dry or to water more if necessary. Taking off the bands and spreading the hemp are the only unpleasant processes attending this plan of operation; the spreading need not be so, unless the operator is in too great a hurry to spread it before it is sufficiently drained; indeed, if the bundles are well selected, they may become nearly dry before being spread.

In freezing weather, if they become frozen before spreading, let them thus remain until either frozen dry or they thaw. The hemp-straw, when being removed from the vat, is exceedingly tender; and in all the manipulations attending this process, great care should be taken neither to break nor tangle it. In passing the hemp through the brake, close attention must be given to

having it handed in small hands, say from one half to three quarters of a pound of lint; under no circumstances to exceed the larger quantity. The butt of the straw should be kept perfectly square. After squaring the butt-end of the straw, before it is placed under the brake, a leather strap, buckled tightly around and within six inches of the root-end of the straw, will prevent its becoming uneven while under the brake. Break the top-end first, leaving only sufficient unbroken straw at the butt-end, by which to hold the hand. The lint should be perfectly clear at the break of the shives. When the process of breaking water-rotted hemp has been properly performed, the root-end of the hand of lint should be as square as though it had been chopped by an axe; it should be clear of all woody matter, have comparatively little tow in it, be free from tangled fibres, and have suffered but little loss in the way of brake-tow. This is one of the most important operations in the preparation of water-rotted hemp, and too much care can not be devoted to it. A hand of hemp, in which the straw was but six feet long, if allowed to become stretched to eight feet in breaking, will certainly result in great loss in hackling, and injuring its quality. The kind of brake must be left to the fancy of the operator. In hackling the hemp, the only instrument necessary is the common tapering heckle of bagging manufacturers; and the process is a simple one, if proper attention has been paid to its previous preparation.

The hand of hemp, not exceeding three fourths of a pound in weight, (half a pound is better,) is grasped firmly as near as practicable to the root-end, not farther from this than will suffice to have the end of all the fibres composing the hand within the grasp. Then a few times drawing it through the heckle, from as near the hand as possible, will finish the operation with this end. Reverse the hand, grasping it just above the point reached by the heckle in the first instance, and clean the root-end of the tow. Any little switch which may be at each end must be cropped off and thrown with the tow. A small box of sufficient length and other dimensions to receive from twelve to fourteen pounds of the heckled hemp in an extended state, must be at hand, in which the hemp is placed by the heckler as it is prepared. The hemp must be placed in the box at full length; the root-end of the bundle must be kept even, and when twelve to fourteen pounds are placed in it, it must be tied firmly around, and within some ten or twelve inches of the root-end. Another small string passed around the bundle, at about two thirds the distance to the top, and tied firmly, may also be used. The hemp has now to be placed in well-pressed bales of four hundred and fifty to five hundred pounds in weight, well covered with bagging and well secured by cordage.

This closes the manipulations through which hemp has to pass in preparing it for naval purposes.

The length of this article has precluded an examination of other plans. I have here given what I conceive to be the best mode of operating with cold water. The business is not an unpleasant one; with a steady market it is remunerative, and I can say from considerable experience, that there is nothing necessarily unhealthy in it.

Bronchitis.—A receipt gives the following as a cure for the bronchitis: Take honey in the comb, squeeze it out and dilute in a little water, occasionally moistening the lips and mouth with it. It has never been known to fail, in cases even where children had throats so swollen as to be unable to swallow.

FOREST-TREES.

HEREWITH we publish an article from the *Ohio Cultivator*, on raising forest-trees from seed.

One of our subscribers requests us to furnish instructions for raising chestnut, walnut, and locust-trees from seeds. This is a subject of much importance to settlers in prairie countries; and even in many parts of Ohio, it would be well if farmers would plant a few acres of their grounds with forest-trees for the prospective wants of their children, if not for their own benefit. In some parts of the State there is already quite a scarcity of timber for fencing and building purposes, as well as for fuel, and good woodland is worth more per acre than that under cultivation.

The first thing demanded, on the part of those intending to plant forest-seeds, is to select such kinds of trees as are best adapted to their soil. Much labor has been wasted by neglecting this precaution; and all the instructions we have seen in books and papers in regard to this business have been defective on this point. It has been stated, for instance, that chestnuts can be raised with the greatest ease from seed; and many farmers have been induced to try the experiment, but have very generally failed because their soil was not of the right kind.

A deep, sandy, and dry soil, is requisite for the successful growth of the chestnut; and it is vain to attempt to make it thrive on soils of an opposite character, as we know from repeated experiments. The black walnut and butternut thrive best in a deep, rich, clayey, and gravelly loam, or what is commonly known as deep limestone soils. The same kind of soil is best suited for the sugar-maple, but this tree will flourish on a greater variety of soils, and requires less depth than the walnut.

The hickory will bear a strong clay soil, better than most other trees except beech. Neither of these is well adapted to the rich, mucky or sandy soils of the prairies. The oak, in some of its varieties, will flourish on most good soils, not too wet or mucky, but is of too slow growth for our fast people. The locust, on account of its rapid growth, valuable timber, and adaptability to various soils, is perhaps the most useful of all—but unfortunately it is so liable to be destroyed by the borer that it can not be relied on in many parts of our country.

Saving and Sowing Seed.—Chestnuts, walnuts, and similar kinds of tree-seeds, should never be suffered to become perfectly dry before planting. If not convenient to plant them soon after their time of ripening, they should be put in a box of sand, and kept moist, (not wet,) and be allowed to freeze during the winter, then planted early in the spring, covering them about two inches in depth. They may be planted where the trees are to remain, taking care to keep the plants clear of weeds and grass while young; or they can be transplanted when two or three years old, taking them up carefully, without injuring the roots, and not exposing them to drying while out of the ground.

Locust-seed may be kept dry, for a year or two, without destroying its vitality, but it must in all cases be thoroughly *scalded* before sowing, or it will lie a whole year in the ground without vegetating. For a quart of seed pour on four quarts of *boiling* water, and let it stand for 12 or 24 hours, when most if not all of the seeds will be swollen to several times their former size. If a considerable portion are not swollen, they must be scalded again. Stir

the seeds while in the water, so as to agitate them briskly, and while in motion pour off the water and swollen seeds, while the others being heavy will remain at the bottom of the vessel; then scald, and let soak as before, and they will generally all swell. The seeds can then be sown where designed to remain, or in a nursery-bed, and the trees transplanted when *one year* old.

ROOT-CROPS.

The following remarks by Rev. J. Fletcher, at the American Farmers' Club, are to the point. He said that he first commenced by the cultivation of equal portions of ground with ruta-bagas, carrots, and beets, but he soon found that it was more labor to raise ruta-bagas than beets; they did not insure any larger crops, and in his estimation they were not worth, especially for milch-cows, more than two thirds as much. Late years he had made beets and carrots his main crop; when they failed, had filled up the rows with ruta-bagas. At first, he sowed after a hoed crop when the ground had been made very rich, and cultivated deep, but he found considerable difficulty in subduing the weeds in his root-crop by this method of culture. He afterward sowed on an enriched clover-lay, well pulverized with the cultivator and harrow, and found less difficulty with the weeds; seemed to have an equally good crop. This was on a light sandy loam.

Since coming here, he had tried carrots and beets, both on green fallow and inverted green sward; the soil a gravelly loam; found that they were considerably the most productive on the former. The roots require a rich, deep soil, well broken, and pulverized by the plough and cultivator. It is better, however, to make the soil rich by previous application, than from the addition of manure at the time of sowing. Freshly-applied manure will not only produce forked and fibrous roots, but the evaporation ensuing from the fermentation of it is inhaled by the leaves, which are the lungs of the plant, and the free circulation of the absorbing powers is thereby checked, and the plant becomes diseased—first the leaves and then the bulb. It may be well to inquire whether, in part at least, this has not been the cause of the failure of the ruta-baga crop in this vicinity the past year.

He had found that the application of salt to the soil, at the rate of about six bushels per acre, had increased the yield of these roots. Had used poudrette and guano, trenched in the rows, several days previous to sowing the seed, and with good success. The rows manured with the guano produced the greatest yield. Carrots and beets should be planted as early as Indian corn, in rows two feet apart. The beet-seed should be soaked two or three days in warm water previous to planting. Carrot-seed should be mixed, and well rubbed with coarse sand, to prevent their adhering to each other, and a few radish-seeds should be planted with them; they will shoot up quick, and indicate the rows, so that they may be weeded out much earlier, and in the end save much labor. Of the carrots, the Altingham, or White Belgium, were the best kinds for field culture. Of the beet, the Mangel-Wurzel, or White French beet. After the first weeding, they may be cultivated with the horse and plough. A soil that will produce fifty bushels of corn, will easily yield seven hundred bushels of these roots, without much more expense of cultivation.

He regarded the carrot as the best food for the horse, and the beet for the

cow, as the latter contains about one third more saccharine matter than the carrot. According to Payen, the white sugar-beet has about 10 per cent of sugar, carrots have from 5 to 7 per cent, and turnips but 2 per cent. The mucilage of the carrot renders it peculiarly adapted to the horse. After fifteen years' experience in feeding carrots, and extensive observation on the subject, he believed it answered admirably as a part substitute for oats. Where a half bushel of oats is given per day, a peck may be taken away, and their place supplied with the same amount of carrots, and the health and condition of the horse improved by the exchange. Independent of its nutritive properties, one of its uses is to lubricate the vascular organs, and thereby promote a healthy action of the system

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STATISTICS OF CHICAGO.

We find the following compilation of statistics in relation to the city of Chicago, in the *New-Castle Courier :*

Chicago.—As we soon expect to be connected with this city by railroad, our readers are doubtless desirous of knowing something about its population, its business, and its prospects for the future. The *Chicago Press*, in an article on this subject, says :

In 1848, the ratio of the increase of the population of this city was, for eleven months, 19 per cent; in 1852, the ratio for fourteen months was 22¾ per cent. These were considered wonderful, but dwindle into insignificance when placed beside the increase of the last year. In August, 1852, Chicago had 38,733 inhabitants. In December, 1853, it had increased to 60,652, being an increase in fifteen months of 57 per cent! In 1840, the population of Chicago was only 4479.

At this time cars are running to and from that city on *ten* roads; *thirty-seven* trains arrive and depart daily. Most of these roads are being extended every day. During this year several of them will have reached the Mississippi; the Great Central Road will be completed to Cairo.

In 1840, the total value of real and personal property was $1,829,420; in 1853, it is $16,841,831. In 1847, the business of Chicago amounted to $2,641,852 in imports, and $2,296,299 in exports. In 1852, the imports increased to $8,328,639, and the exports to $10,709,333. These items are interesting, showing the rapid growth of a city destined to be the largest city in the West. Estimating the increase of the next fifteen months to be equal to that of the last, Chicago will have at the end of that time a population of upward of 83,000.

The following table we copy from the same :

Total population of Chicago,		60,662
" dwellings,		7,627
" families,		9,435
" white native population,	29,134	58,548
" " foreign "	29,404	
" colored "		583
" stores and business-places,		1,184
" schools,		54
" churches,		61
" manufactories		196

PRODUCTS OF THE FRENCH COLONIES IN ALGIERS, AT PARIS.

THE European population of these colonies is 130,000, of whom 80,000 live in towns and 50,000 are devoted to agriculture; but they are unskilled in the art, and are not provided with the best implements. Among the products exhibited at Paris from these colonies are the following:

COTTON—The culture of which is encouraged by the French government. The first experiments were made in 1846. In 1852, 1500 acres were planted for this crop, but it was much injured by the rains, and nearly destroyed. Georgia Sea-Island appears best suited to the soil and climate. The culture of this staple can only be maintained by the help of the government.

WOOL.—The samples were from the native African sheep, and the quality is desirable.

TOBACCO.—These samples were numerous and well grown, but of inferior flavor. There are now about 600 planters of tobacco, the cultivation having been commenced in 1844. 500 hectares, equivalent to about 1166 acres, are now grown, which produce some 500,000 lbs. of tobacco.

CEREALS.—Grains are produced to some extent. Rye is but little used, but produces well. The wheat is good. Barley is the most important of these crops. The Arab and his horse live upon it. Mohammed said, "Every kernel of barley given to a horse is worth an indulgence in the other world." Barley is also used extensively in brewing.

MINERALS.—In this department, iron, copper, lead, antimony, carbonate of zinc, manganese, and mercury, were exhibited. Copper-mines are numerous, and many of them are worked by English companies. Fuel is too scarce to work them, and the ores are sent to England. No coal has been discovered; but plaster of Paris, alabaster, porcelain-clay, and soap-stone, are found. Fine varieties of marble occur. Some of these are equalled only in whiteness by the marble of Carrara.

The Coral-fisheries are extensive and profitable. About 1,500,000 francs' worth are annually taken from the sea.

GRAND NATIONAL CATTLE-SHOW.

A GRAND National Cattle-Show will be held on the 25th, 26th, and 27th days of October, under the direction of the United States Agricultural Society, in the city of Springfield, Clark County, Ohio. No less than SIX THOUSAND DOLLARS will be distributed in premiums, for the best stock of the various breeds of cattle there exhibited. We commend it to the attention of all who can be present.

The following circular will give further information in relation to this grand national farmers' jubilee:

The Executive Committee of the United States Agricultural Society have been careful to select a time that will not, so far as they are aware, conflict with any of the State Fairs or other meetings of general interest; and after due deliberation have selected this place as the most eligible for holding the Cattle Fair. Springfield is centrally located as regards the cattle region; it is most convenient of access by railroad from almost every point of the com-

pass. The means for accommodating, at very moderate charges, a large number of persons, are ample. Private houses will be opened for the reception of guests. There are also eighteen cities and towns within reach by an hour's ride on the railroads, on which extra trains will be placed to accommodate such as wish to go elsewhere for lodgings.

About twenty acres of ground have been inclosed, and more than three hundred stalls will be prepared for the shelter of cattle during the Convention.

It is expected that very liberal arrangements will be made by all the railroad companies, both for the transportation of cattle and the conveyance of passengers to and from the Fair.

We respectfully solicit your attendance on the occasion, and that you will furnish such aid as you may feel disposed in making known the objects, time, and place of the Convention; and if you have improved stock of cattle, of any description, we cordially invite you to enter them for competition.

A list of premiums and a copy of regulations will shortly be published.

Very respectfully, yours,

J. T. WARDER,
C. M. CLARK,
CHANDLER ROBBINS, } *Local Exec. Com.*

ASPARAGUS.

THE editor of the *London Gardener's Chronicle* says that information on procuring a good supply of this excellent vegetable is much needed, if the article offered for sale is considered. The growers of this vegetable ought to recollect that the two points of excellence in growing it are succulence or size. It ought to be as thick as the thumb and as brittle as glass. To secure this result, two things are indispensable: it must be produced by very vigorous plants, and it must grow very rapidly. The weed-asparagus differs as much from the cultivated plant as the lean, half-starved, half-wild animal does from the large, full-fed one. Feeding makes all the difference either in plants or animals. Experience shows that its great strong roots take up any quantity of manure if applied at the right season; and that season is after it has begun to move in the spring. Manure applied at any other time is resolved into a fat, oozy slime, that only aids to rot the roots of the plant. The exuberance of growth of the stems and leaves ought to be cherished during the summer, and if any method can be adopted to prevent the growth or ripening of the berries that contain the seed, so much the better. Every one of the little thread-like leaves ought to be left to grow, as they add to the strength of the plant. Small as these leaves are, and slender as the branches are, they aid in giving vitality to the plant, just as much as the broad leaves of the largest forest-tree. If this treatment be followed out, there will great buds, as large as acorns, be seen in clusters on the crown of the roots at the next season, out of which will grow the gigantic shoots on the succeeding spring. But to have the asparagus plants vigorous enough to do this, no crop must be taken from them before they are of sufficient age to bear it. The older the plants before a crop is taken from them, the better. Indeed, to obtain real giant-asparagus, it is necessary to let the beds rest one year after a crop has been taken from it, and to cut it only biennially.

The asparagus being brought to the necessary state of vigor, the next question is, how to secure the necessary succulence, which it never has beyond two or three inches in the English markets, and seldom more than that anywhere else. That succulence will depend upon temperature as much as upon other causes. The warmer the asparagus-bed is kept while the sprouts are rising, the more brittle they will be, provided the temperature does not rise above 85° Fahrenheit at the most. Under ordinary circumstances, every thing is done to keep the asparagus-bed cold; buried twelve to thirteen inches below the surface, the influence of the sun is but slowly and imperfectly felt. It is only when the roots are lightly covered by some rapidly-conducting material, that the sun can exercise his proper influence unassisted by artificial contrivances. Hence one of the greatest faults the asparagus-grower can commit, is to bury his plants deep. The intelligent grower just covers his plants with soil resting upon a deep bed of nutritious matter. The earliest rays of the sun are felt in such a case, and as soon as the dormant energy of the plant is roused, it continues to be exercised without interruption. Asparagus thus obtained is green, and so it should be; but the evidence of the senses of those who try it will satisfy them that these suggestions contain the true principles of growing this plant, which is a source of profit to the market-gardener in the spring, and which is welcome on every table.—*Mich. Far.*

BRECKINRIDGE CANNEL COAL.

Professor B. Silliman, Jr., read before the American Scientific Convention at Washington, last week, a paper on the Breckinridge Coal-field of Kentucky, of which the following is an ample summary:

The great Illinois coal-field, it is well known, crosses the Ohio and extends over a considerable part of the northern or north-western and middle districts of Kentucky, covering some eight or ten counties in that State, including those of Breckinridge, Hancock, and Grayson, where the speaker had seen it. The aggregate area thus covered by coal in Kentucky has been estimated at 4500 square miles. Almost no efforts have been made to explore this valuable coal-territory until a very recent period. The coal-openings are still very few, and confined chiefly to the banks of the Ohio and its navigable tributaries.

The coals of this region, as well as those of Illinois, generally belong, with some remarkable exceptions, to the class of moderately fat bituminous coals. They have not hitherto been brought into general use, and although the coal-openings at Hawesville and Cannelton are only 120 miles below Louisville, their coals have never yet competed successfully with those of Pittsburgh, although the latter have been floated in flat-boats not less than 700 miles down the Ohio.

Within a short time, however, more attention has been bestowed upon the Kentucky coals, and between the discovery of coals of a very superior quality and before unknown, and the introduction of the railway-system upon a scale of very considerable extent, these are likely soon to become of great industrial importance. Unfortunately, the actual consumption of bituminous coals in the West can be ascertained only in a very general way. It has been estimated by some persons to be equal in quantity to the anthracite and dry

bituminous coals consumed in the Atlantic States. This seems, however, too high an estimate, and it is probable that the amount consumed in 1853 did not exceed 3,500,000 tons. All calculations, however, of the amount of coals consumed in the United States made to-day are comparatively unreliable to-morrow, such is the rapid progress of the development of this element of power. It is only by a comparison of several years that any data can be obtained for the future. In 1847, the whole coal product of all parts of the United States hardly exceeded, it is said, 4,000,000 tons. In 1854, the amount of anthracite coal brought to market did not exceed half a million of tons. In 1853, the amount is believed to have gone very considerably beyond 5,000,000 of tons. It is pretty certain that an annual increasement of thirty per cent in the product of this important staple, is not too high a ratio for its probable increase.

Breckinridge County Cannel Coal.—The coal-measures in this county reach an elevation of about 500 feet above mean high-water of the Ohio River at Cloverport. The strata lie with remarkable uniformity, and nearly horizontal, their dip being south-west, at the rate of about four inches in one hundred feet, or less than twenty feet in a mile. The surface of the country is deeply cut down by the wear and tear of the water-courses, and of atmospheric agencies. The bluffs on the Ohio, at Cloverport, as elsewhere in that region, are composed of a fine-grained, granular sand-stone, loosely aggregated, thickly bedded, of a light-gray color, nearly free from any thing but silica, and easily reduced to a sharp, clean, white sand. No traces of organic remains could be found in it; but, from its position, it must be below the coal. The position and comparative thickness of this bed, and of the other strata observed at this place, may be seen by reference to the diagram on the black-board. It will be observed that *three* coal-seams are shown. The two lower are common bituminous coal, and need not be particularly mentioned in this connection, except to say that the lower bed, (from four to five feet in thickness,) is believed to be the same which is worked at Hawesville. The coal which now occupies our attention is the uppermost member of the series, occurring at an elevation of nearly three hundred feet above the level of the Ohio, and capped by a thick overlying mass of sand-stone and shales. This bed of cannel coal is about three feet in thickness, with a bituminous shale of some ten feet in addition, on which it immediately rests. As a consequence of its position, it covers a less area of country than the lower beds, having been removed in many places by denuding causes. It is to be looked for in the regions where I have seen it—in the uplands and hill-tops, and only there, where the general level of the country reaches a certain elevation.

The northern margin of the coal-beds in the place referred to, lies about nine miles from the Ohio River, to which point a railway has been built. Here a marked change in the topography of the country is visible. The hills become more sweeping, and the valleys less precipitous, while the contour lines wind in graceful and gentle curves around the base of the hills. The upper members of the series at this point furnish a soil of enduring strength, as is attested by the size and abundance of the forest-trees. Numerous small rivulets, the head-waters of Clover Creek, afford ample drainage.

The cannel coal of Breckinridge County is characterized by the following peculiarities, namely:

1. *Its density*, which is 1.14 to 1.16. Common bituminous coal varies from 1.27 to 1.35, and the anthracite from 1.50 to 1.85. The only coal lighter than this, so far as is known, is the so-called "Albert Coal," of New-

Brunswick, whose density is 1.13. The cause of this low density will be sought, chiefly, in the very large amount of volatile matter.

2. *Its Tenacity and Elasticity.*—Coals are usually brittle and inelastic. This is tough, and resists powerful and repeated blows, and rebounds the hammer like wood. The splints of this coal may be sensibly bent by pressure, and regain their original form again. A fissure in it may be sprung open by a wedge, and will close again on withdrawing it. The writer has never seen any other coal with this peculiarity.

3. *Its Electrical Power.*—The Breckinridge Coal becomes powerfully excited by friction, with resinous electricity. This peculiarity may be demonstrated very easily, and has never been before noticed in any other coal, so far as the writer has been able to learn, except in the "Albert Coal" of New-Brunswick, before named. It is not easy to understand why other very highly bituminous coals should not have this property, but such is the fact with a large number that have been tried.

4. *Its Chemical Constitution.*—This has been determined in the usual way, by destructive distillation, with the following results, namely: In 100 parts we have—

	I.	II.
Volatile at Redness,	60.27	64.297
Fixed Carbon,	31.05	27.160
Ash,	8.66	8.470
Sulphur,	a trace	a trace
	99.93	99.927
Coke,	39.71	36.66

A comparison of these analyses with those of other highly bituminous coals, will show that there are very few examples recorded of so high an amount of volatile matter. For example, we find among American coals that the "Albert Coal," of New-Brunswick, yields 61.74; the coal of Chippenville, Penn., 49.80; that of Kanawha, 41.85; that of Pittsburgh, 32.95 per cent.; while the mean of the fat, caking coals of Liverpool is 37.60 per cent. The Lowmoor Scotch Cannel, and the Boghead, also a Scotch coal, are the only ones giving a higher proportion of volatile matter. In fact, the ordinary proportions of volatile and fixed ingredients in bituminous coals, are completely reversed in the Breckinridge Cannel.

Notwithstanding the large proportion of bituminous matter which this coal contains, it yields nothing to the action of solvents; while the Albert coal yields about 20 per cent to spirits of turpentine and benzole.

As might be expected, this coal yields a very powerful and abundant flame, demanding a free access of air for its perfect combustion. In burning, this coal does not coke or cohere, nor does any fatty exudation distil out of it, as in the combustion of the fat, caking coals of Eastern Virginia and Pittsburgh. It appears fitted, above all others in the Valley of the Mississippi yet examined, for raising steam in the cylindrical boilers of the Western rivers, where an abundant and sustained flame is desired. For the same reasons its adaptation for sugar-boiling, stationary steam-boilers, reverberatory furnaces, and glass-works, is very obvious. For private use it possesses the advantage of great cleanliness, not producing any dust or powder of small coal, and not even soiling a white glove in the handling. It does not clinker upon grate-bars, so far as experience has tested it. It is unfit for blacksmiths and iron-furnaces, as it produces so small a coke.

Another peculiarity of the Breckinridge Coal, due to its state of aggregation, is its resistance to injury from atmospheric and mechanical causes; such is its strength and elasticity, that it loses practically nothing in the transportation or handling. It may also be exposed for any length of time to the rains and frosts without the least injury. Those practically acquainted with coals will appreciate this peculiarity without comment. It is well known that not less than 10 per cent loss is occasioned by every handling of ordinary bituminous coals, owing to the breaking down of the lumps; while under the influence of the rains and frosts, the common coals are soon slacked to dust, or set on fire by fermentation of their continued pyrites. In several places where the speaker first uncovered this coal on the hill-sides, its out-crop was found to be clean and sharp, the angles of the coal perfectly preserved, and no "coal-blossom," or dust of decomposed coal, visible in the surrounding soil. A slight rusty discoloration of the outer surface of the coal was all the change visible in it; and half an inch within this surface the mass appeared as clear and bright as when taken one hundred yards from the surface. No better evidence can be obtained than this of the power of this coal to resist atmospheric influences. This character marks itself on the topography of the region. A slight terrace, or projecting ledge, "a bench," as the coal-viewers call it, may be seen marking on the hill-sides the situation of this coal-seam.

In some respects the Breckinridge Coal is like jet. Like that substance, it sustains perfectly well all the mechanical operations of sawing, turning, and drilling, and may be made to assume a high polish. It is easily wrought into various delicate ornamental articles.

The sandstone roof overlying this coal is firm and heavy. In it are seen stems of several species of coal-plants, but not very abundantly. There is no overshade, with abundant plants, as in many bituminous beds. The fire-clay beneath is very firm, and contains seams of flat, argillaceous wire-stems, which appear abundantly after the floor has been thrown out for some time, subject to the action of the frosts. No roots of stigmarial were seen in the floor or roof. This coal appears peculiar in having the stems and pouds of sigillariac imbedded only in the substance of the coal itself. A specimen illustrating this circumstance is on the table. Stems of this sort were seen six feet in length. The pouds are converted into a light-colored pyrites, contrasting very beautifully with the dark ground on which they rest. When a considerable mass of this coal is burned without disturbance, cinders of some size may be found in the ashes, which present, in a very remarkable manner, the reticulated appearance of an endogenous stem, as seen in cross section. This circumstance, together with the other peculiarities of this coal already dwelt on, led the writer to query whether this coal-seam was not composed entirely of the compressed stems of large trees, brought together in the manner of ligurite, rather than that of ordinary bituminous coal, to which it has apparently no analogy.

Petrolium and Coal-tar bells.—At the foot of the bluffs of sand-stone, under the coal in numerous places, coal-tar exudes, sometimes accompanied by sulphur-water, again by chalybeate-water—sometimes without either. It is the occurrence of these springs which has given origin to the "Tar and White Sulphur Springs," a well-known watering-place. Near these springs, but in a place where no exudation is now seen, was observed a heavy mass of elastic bitumen, a specimen of which is here shown. This substance is plainly the product of the exudation of petrolium. It is seen investing the sand-rock and raising the roots of trees, but is now so firm as to require an

axe to remove it. It would seem that this substance bears to the petrolium from which it is formed the same relation that resin and pitch bear to the turpentine as it exudes from the tree. It has, however, in its change, lost the power of fusion; it burns with an abundant, smoky flame, but does not melt.

PIKE COUNTY, ILL.

The following is the assessment of this county for 1853:

	No.	Value.	Av. Val.
Horses,	7,476	$331,056	$44 28
Neat Cattle,	17,445	181,871	10 42
Mules and Asses,	457	21,610	47 28
Sheep,	11,521	11,117	96
Hogs,	39,193	87,897	2 24
Carriages and Wagons,	2,862	100,111	24 76
Clocks and Watches,	2,491	15,357	6 16
Pianos,	11	877	79 90
Goods and Merchandise,		128,913	
Manufactured articles,		32,989	
Moneys and Credits,		455,621	
Bonds, Stocks, etc.,		14,185	
Unenumerated property,		210,613	
Total,		$1,592,115	

FRANKLIN COUNTY AGRICULTURAL SOCIETY.

The annual meeting of this Society was held at the City Hall recently, and notwithstanding the unpleasant state of the weather, a large number of substantial farmers were present. Mr. Brush, the President, delivered a very able and eloquent address, after which the following gentlemen were elected officers for the ensuing year:

William L. Minor, President.
Benjamin Blake, Vice-President.
J. Wm. Baldwin, Secretary.
Thomas Moodie, Treasurer.
Messrs. Seymour, Sly, Sullivan, Burr, and Clarke, Managers.

J. M. Sullivant offered the following:

Resolved, That it is with profound regret the members of the Society hear that their able and efficient President, Samuel Brush, Esq., peremptorily declines a reëlection.

Resolved, That this Society have a high appreciation of his valuable labors in their behalf, and hereby tender him their hearty thanks for the good he has accomplished for the cause of agriculture in Franklin County.

Resolutions were also passed in relation to the arrangements of the next Fair, and also to print the address of the President.

THE SHAKER BARN.

At Enfield, N. H., the society of Shakers have projected, and have in good progress, a granite barn, two hundred and fifty feet in length, by fifty in width, (for the accommodation of fifty choice cows,) to be roofed with slate from Wales. Mr. Henry Elkins, the designer and architect, estimates the cost at $15,000, and gives the following description of it:

The location and arrangements of this barn-edifice are in many respects peculiar, and in all respects admirable. Its outer walls are of stone and its roof of slate. It is located across a gentle ravine, opening from bank to bank; and is so arranged that teams laden with hay or straw may enter at either gable, precipitate the load to the bay below, pass on, and make their egress at the other end. Such a situation has enabled them to extend a cellar its whole length for the reception of the manures both solid and liquid, which are kept from filtration, or otherwise escaping downward, by a plank-floor laid upon a stratum of clay, wrought as a bed of mortar. The descent of the ground upon the back-side of the barn, renders ingress and egress to and from the cellar convenient and easy for carrying pond-mud and manure. The cows will be tethered all upon the south side of the barn, and in one continuous longitudinal stable, sixteen feet in width, with walls plastered inwardly with lime-mortar, and leaving a walk behind the gutters, of four feet in width, and a corridor or passage between the cribs and mows on the north side, (which now preserves the warmth of the barn throughout,) sufficiently wide for a horse and cart to pass; which is often convenient, when feeding with green food.

The scaffolds above the cows are a best depository for litter, which is let down through a trap-door in the rear of the cows, and when partitioned into rooms serve as a place for meal, grain, and also for a herdsman's office. All these arrangements render it, perhaps, the most convenient as it is undoubtedly the most expensive barn in America. Its height to the eaves upon the back-side is to be thirty-four feet; stables, eight feet, (including timbers,) and scaffolds, sixteen feet. Flooring for teams framed four feet below the eaves.

HORTICULTURE.

We present to the lovers of beautiful flowers the following instructions in reference to a very pretty family of flowers. We take them from a treatise in *The Horticulturist.*

The Daisy Chrysanthemums.—If you would like to bloom them in the open ground, put them in a *dry, warm border;* under your south windows would be a good place, if there are no trees in the way to hide them from the sun. Some of them bloomed earlier than others; for instance, *Sacramento, Autumna, La Gitana, Solfatare, Poulidetto,* etc., all pretty, and good bloomers, within doors or out.

If you would like to bloom them in your parlor or green-house, in May take strong cuttings from those in the open ground, place them in the sunniest spot in your garden, where they can remain until August or September, allowing them, of course, plenty of room. In such a place the plant will break freely, and have a fine, bushy top, without pinching at all; and these

plants will retain their lower leaves better on account of being in the open ground. Or, when your cutting begins to grow, you may cut it off within an inch of the ground, and it may become still more dwarf, and perhaps have a large number of flowers. Pot them in August or early in September, in good, rich mold; water once a week with manure-water, or a solution of sulphate of ammonia. If they mildew, syringe them with sulphur-water; or, if you have no syringe, just before a shower comes on, sprinkle them well with sulphur. Remove them to the house before there is danger of sharp frosts, but keep them out as long as you can, especially if they are intended for the parlor. After two or three hard frosts, perhaps, they might safely remain out for one or two weeks. After this, a south window in the parlor is probably the best place for them. In December or January, after the bloom is over, you can put your plants in a cold, frosty room; and if you want the pots, turn the plants out and place them close together, cutting off the tops, of course. Or, if you have the heart to do it, throw your plants away, and return to your garden in the following May for a fresh supply. In this way you have the plant in pot about three or four months, and that at the time when you think less of the trouble on account of the flourishing buds and beautiful blossoms.

THE DAHLIA.—This plant should be started in the parlor or conservatory, very early, and set in the open air about the first or middle of June, according to the season. It will not bear the frost. Give each root about four feet of space, and water the entire plant freely. Strong plants, raised from cuttings, are better, for a showof flowers, than old roots. Turn out of the pots without disturbing the roots, and guard them with a stake as it grows. The following list of varieties is recommended in *The Horticulturist.*

Agnes, (Edwards,) pure white.
Aurora, orange-buff.
Bob, (Drummond,) vivid orange-scarlet.
Grand-Duke, (Turner,) bluish-lilac.
George Villiers, (Union,) dark purple.
Miss Caroline, (Brittle,) white, slightly tipped with purple
Morning-Star, (Turner,) orange-scarlet.
Plantagenet, (Turner,) purple, shaded with lilac.
Sir John Franklin, (Turner,) buff, with salmon at the base of the petals.
Sir R. Whittington, (Drummond,) ruby-crimson; a large, perfectly-formed, superb flower.

Fancy varieties, (so called,) striped and tipped.
Beauty of the Grove, (Burgess,) salmon-buff, tipped with purple.
Claudia, (Lochner,) violet-purple, tipped with white.
Douglas Jerrold, (Keyne,) buff, edged with scarlet.
Duchess of Kent, (Knight,) pale-yellow, tipped with white.
Queen Victoria, (Wheeler,) yellow, distinctly margined with red.
Unanimity, (Edwards,) scarlet, and deep yellow in regular stripes.

THE PIE-PLANT.—A correspondent of the *Indiana Farmer* expresses the opinion, based upon experiment, that the use of ashes as the manure for the pie-plant, produces a more delicious plant than any other mode of culture; not being as sour, but containing just enough acidity to make them pleasant. The reason given for this is, that the acid peculiar to the rhubarb is neutralized in part by the alkali of the ashes.

PROGRESS OF MECHANICS.

THE ART OF PRINTING.—Printing from blocks is supposed to have been invented in 1422. The earliest printing from any wood-block, of which we have the date, is in the collection of Earl Spencer. It is the representation of St. Christopher carrying the infant Saviour across the sea. It bears this date. It was discovered in a German convent. From cutting whole pages, of entire blocks, the step was easy to cut letters separately, upon wood, and the next, on metal, and this was followed by forming matrices or moulds for casting each letter separately.

Conrad Saspach was the turner who made the first printing-press. This he did under the direction of John Guttenburg, a man of illustrious family, who, in the revolution of Metz, retired to Strasburg, where he made his first experiments in the art of printing. This press was constructed in 1436.

At his death, his machine, having fallen into the hands of some of his relatives, became the subject of a lawsuit. The trial was had in December, 1439, and five witnesses testified that Guttenburg was the first person who practised printing by movable types.

Guttenburg's first notions in printing are said to have been suggested by impressions made by the seal of his ring upon wax; and his first ideas of a printing-press, by carefully observing the action of a wine-press. Shœffer, in conjunction with Faust, was the first who invented metallic types.

The precise position occupied by various persons connected with these inventions is by no means clearly ascertained. Several persons are brought forward as worthy of more especial honor, but it is established beyond dispute that Guttenburg produced the first printed book, and hence he is universally called the FATHER OF PRINTING, and Peter Shœffer, already mentioned, the FATHER OF LETTER-FORMING, and John Faust the generous patron of the infant art.

The Metz printers were sworn to secresy, and their secrets were kept inviolate till 1462, when the city was sacked and plundered by Archbishop Adolphus, and the workmen were scattered in all directions. Each then considered himself independent, and freed from all the obligations previously assumed. Guttenburg died in 1468.

The first printing-presses were of wood. The power was a screw, operated by a lever, as in modern hand-presses.

Improved presses came into general use in Holland several years before their introduction into England, and the first important change in their construction was wrought by an ingenious artist named Wm. Jansen Blaeu, of Amsterdam. These improved presses differed very little, in their principles, from those of modern times. The spindle and its connections have been the chief point of improvement. Two pulls were required, especially for large forms.

Wooden presses were then superseded by those made of iron, the invention of Earl Stanhope. It had before been attempted to introduce a compound power into the wooden press, but it was incompetent to bear so great a strain. The French had, however, constructed a press, worked by a long lever, which proved to be of little value.

Earl Stanhope's press was completed in 1800. The handle was attached to a rod which crossed the platten, and the rod was connected with the spin-

dle by means of machinery. The carriage rested on wheels, which ran on a straight edge. He took out no patent, but left the whole field open to all who chose to enter it.

This press was modified by the introduction of the Sector press, in which the sector was substituted for the screw, and by having a large screw fixed in the head of the press, for regulating the power of the press.

The next invention was Cogger's Press, erected by Cogger & Scott. This consisted of two upright pillars of wrought-iron, upon which the cast-iron head was screwed. It had sectors, and a screw in the head for the purpose of regulating the power, similar to the first patent. The platten was secured by two rods, passing through the head and till, and fastened to the platten by small pins. The platten was returned by the power of two spiral springs. The power was a compound-lever, like that of Earl Stanhope.

The Ruthven press, the next claimant for public favor, was nearly square. The table was stationary, the platten drawn over by the hand, being supported by two iron springs, under which were four brass bevelled wheels, which ran on two pieces of bevelled steel. When the impression was taken, the springs yielded. The power was regulated by nuts upon screws on the top of the head. The works beneath were complicated.

The Russel press, and the Albion press, invented by Mr. R. W. Cope, followed in order, and are still in use. The latter is in high repute, but can not be properly explained without a diagram. It is claimed for this press that it has superiority over others in being better adapted for expedition, the bar being attached to the near cheek instead of the off one, as in the Columbian, and having about a fourth of a circle to traverse, and for its simplicity of construction, the ease of its pull, and the comparatively small weight of metal which it requires.

Hydraulic presses were first introduced to the public about 1810 or 1812, by Mr. Bramah, of Piccadilly. Since the expiration of his patent, various improvements have been introduced, which render them of great value.

Thus far we have referred only to English patents.

One of the earliest inventions in this country, in this department, was that of Mr. George Clymer, of Philadelphia, called the Columbian press. In 1817 he visited England, and an examination of his press led to the conviction that it was a valuable improvement upon those previously in use, and it was introduced at once into several of the large establishments in London, and of course they soon were scattered in many other places. It is said to be better for heavy work than for light jobs, and not so expeditious as are some others of a cotemporary period. This press was used in England, in preference to all others, for printing a most singularly splendid work in letters of gold, of the august ceremonial of the coronation of "his most gracious majesty, George the Fourth."

Further improvements and original inventions connected with the printing-press, by our own citizens, must be reserved till our next number.

Stereotyping.—This art, in its infancy, is somewhat involved in mystery. In 1728, Wm. Ged, a goldsmith of Scotland, turned his attention to this subject. He made a contract with two persons, named Fenner and James, who obtained the patent for the University of Cambridge, which was made out in the name of Fenner. On his death, the University refused to renew it to his widow. The new patentee was ordered to resort to the old process of printing, and the plates of the Bible and Common Prayer were melted down. Soon after, Ged died in poverty. Experiments were afterward made by others. About 1804, it was revived by Earl Stanhope, assisted by Mr. A. Wilson, a

printer. In the *Monthly Magazine* of April, 1807, it is stated that "Stereotype had not been adopted by the booksellers of London, and it does not appear that more than twenty or thirty works would warrant the expense of being cast in solid pages."

SCIENCE AND THE PEOPLE.

We fully agree to the practicability and utility of the plan proposed by one of our Southern exchanges, as given below. The people can learn a hundred times more than they think they can. They can procure valuable stores of natural history, and collect the substantial memorials of the leading facts in science. We give the following without fee—only—if any of our readers will collect specimens and prepare them as here described. If they will forward to us, postage-paid, a single specimen of each, numbered, so as thereby to be identified, we will return to them the name, habits, etc.—[Eds. P., L., & A.]

Work of the Million.—Every body ought to be engaged in some useful employment, and if an individual can not do this, he can do that, and by his labors add something to the general stock of knowledge, and increase the comfort of all. If a man can not maul rails, or pound the anvil, or penetrate the depths of philosophy, or theology, he can be useful in picking up bugs, and snails, in stuffing snakes, rabbits, and birds, or in collecting the fossil remains of by-gone ages.

In this way any individual who has a leisure hour now and then, might collect, in a few years, a geological cabinet for himself, or do much to increase the store of geological specimens in the institutions of the land.

But says one, "What could I do with bugs, snails, and birds, if I had them? I know not how to prepare them so as to prevent them from smelling, or stop their decay."

Well, we will furnish a few receipts, which, if any one will follow up, he may spend his leisure hours pleasantly and profitably.

We have received from one of the most scientific men of this district, and probably of the State, a few receipts touching the preparation of specimens for geological cabinets, and as we do not know that a "copy-right" has been secured for these receipts, we publish them with the hope that by them some of our friends scattered over the South will prepare for Erskine College a handsome collection of specimens, and send them or bring them on to the next meeting of synod. We are anxious to furnish the college with a splendid museum and a good library, as well as with an endowment-fund, and if the friends of the college, scattered over a wide field, will each lend a little help, a geological cabinet may be furnished, in a few years, not to be surpassed by any thing of the kind in the Southern States. Could not the Alumni of the college each send up a collection of fossils, or recent specimens, rare and valuable, and thus increase the advantages of their alma-mater? The students in attendance might do something to increase the geological cabinet.

In order to preserve bugs with hard-wing cases, such as the "big-bug," or beetles that buzz about at night, and also the bugs with thin or nerved wings, (Neuroptera,) such as the Dragon-fly, or "Devil's darning-needle," as vulgarly called, let them be placed for a short time in boiling water, to extract the oil out of them, then put them for *ten days* in the following solution, namely:

1 quart alcohol, 2 oz. gum-camphor, 2 oz. arsenic, ½ oz. corrosive-sublimate.

To prepare snakes, lizards, and the like: Skin them by making an incision lengthwise in the belly, and drawing the body or flesh through that incision. This will be apt to turn the skin inside out, but turn it back *immediately*, for it may be difficult to do so if allowed to stand. Cut the body off at the head, leaving the head unskinned; then place the skin in the above solution ten days, then stuff it with fine chopped cotton, dusting it inside with a little dry arsenic.

All crustaceous animals, such as the craw or crayfish, are to be prepared in the same way, by placing them ten days in the above solution, without extracting the viscera or bowels. It should be remarked here, that the moluscous or soft matter in a snail may be readily extracted *after* taking it out of the boiling water, and before placing it in the above solution, by crooking the point of a pin and hooking out the soft matter. The whole may be looked upon as a "pin-hook" business; but no one would think so, if he could see the splendid collections that have been made by little and little, and the valuable information thus acquired.

We do not understand that the crustaceous animals are to be placed in boiling water, but only in the solution, and then neatly fixed on boards or in small boxes. with a glass cover, by headless pins. So with the bugs.

To prepare fishes for preservation: Skin them, dust them plentifully inside with dry arsenic, or rather *rub* it in, stuff with chopped cotton to the natural size, having measured them before skinning, wash outside with spirits of turpentine, varnish with tableau (?) varnish. Small fish may be put in the above solution, without skinning or extracting the viscera.

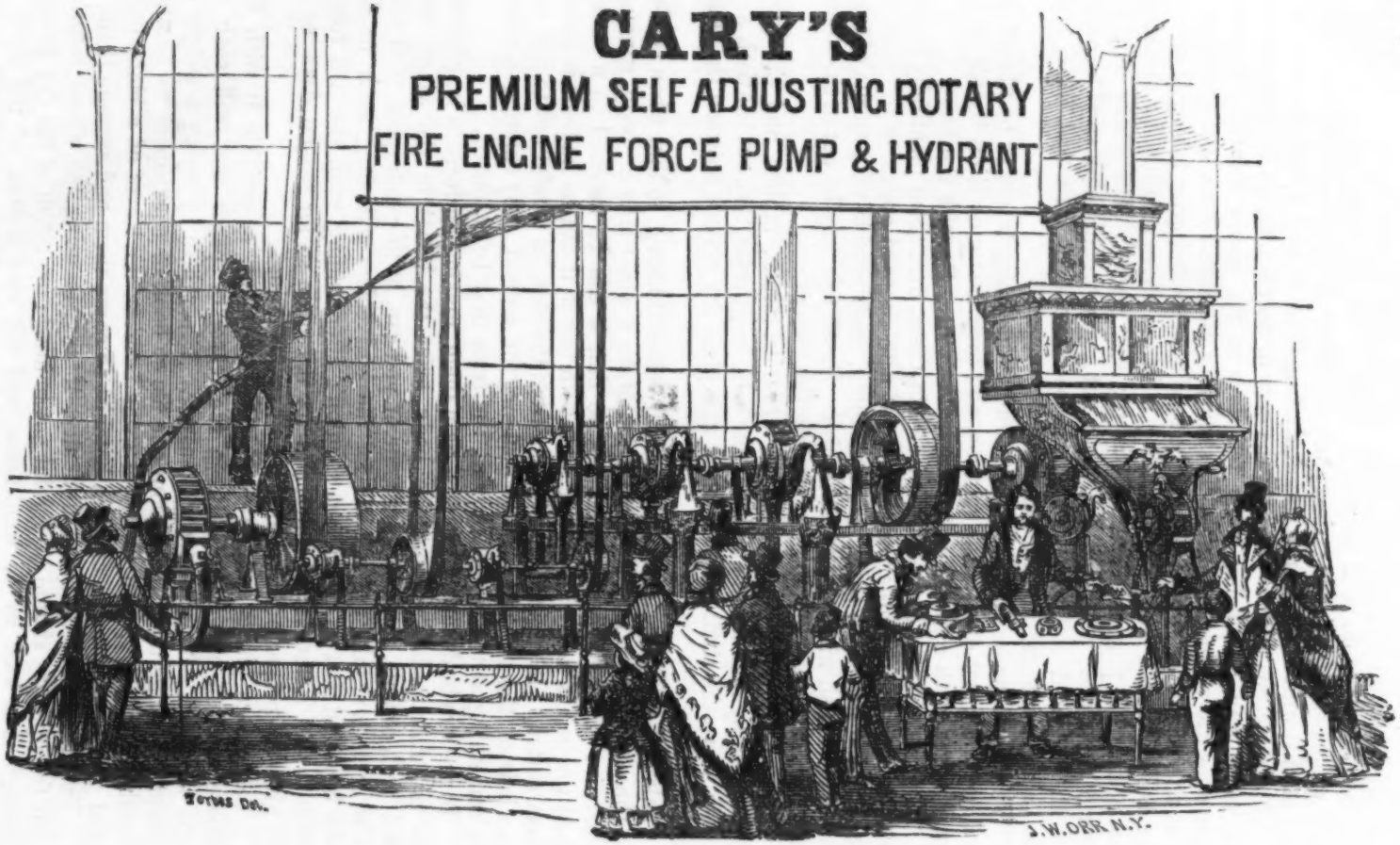
To prepare quadrupeds, such as squirrels, minks, rabbits, and the like: Skin them by making an incision in the belly lengthwise, take out the flesh and bones, leave the skull in, but skin it and place dry arsenic between the skull and the skin.

Take the exact measure of the animal before skinning, so that when stuffed to the same size it may look natural. Make a wire-frame or body, running the wire through the legs and feet so that it can be fastened to a board, dust the inside well with arsenic, stuff with tow if it can be had—it is better than cotton. In taking the tail-bone from the skin, be careful not to pull out the hair of the tail, as that will disfigure the animal. By entering a clamp or something at the root of the tail, the bone may be extracted.

To prepare birds for a museum: Skin them, making an incision lengthwise, as in quadrupeds, take out the body, leave the bones in the wings, dust well with arsenic, make a wire-frame, if you can, as in quadrupeds, stuff with tow or cotton, take the measure of the bird before skinning, wash or dip the legs and feet in the above solution; after stuffing, wrap the bird round with thread a number of times, and let it remain so for several days, so as to give the proper position to the feathers and wings.

To prepare plants and flowers: Dip the plant, or sprinkle it with the above solution, put them between the leaves of paper that will soak up the moisture. Newspapers will answer. Press them by laying a weight on them, exchange them daily, from one file or book of newspapers to another, until they are dry, then lay them away between the leaves of a blank-book, and give them a name, or get a botanist to name them and arrange them.

There will not be much difficulty, if any, in using the above *solution*, but the operator should be careful not to inhale too much of the dry arsenic; though it is said to be wholesome, and will cure a man of the chills to prepare specimens with arsenic. It will hurt the fingers a little if not carefully used. Insects will destroy the preparations, unless arsenic or the above solution is used. All hands to work, then. H.


CARY'S
PREMIUM SELF ADJUSTING ROTARY
FIRE ENGINE FORCE PUMP & HYDRANT
Thomas Del.
J.W.ORR N.Y.

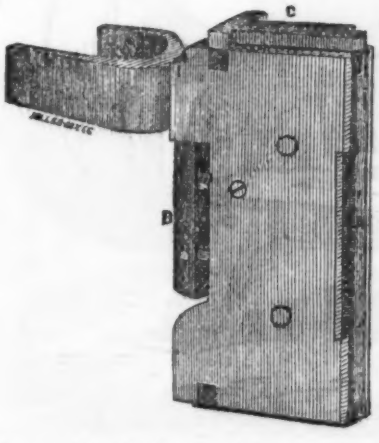
CARY'S PUMPS

THE visitors of the Crystal Palace, who have only entered the Machine Arcade, can not have failed to notice the system of pumps which are constantly throwing streams of water, under glass, through a variety of pipes attached to different parts of the machine. The engraving hereto annexed is a fair representation of this compound machine. A jet is thrown perpendicularly from the top, and a handsome cascade, which would be beautifully ornamental in any yard, beneath the upper oblong box, is constantly in action, while other jets are added at pleasure. The following is a simple description of this efficient contrivance.

The peculiar points of this pump may be briefly stated as follows:

It is perfectly simple. No part of it is complicated, or liable to get out of order. The general construction of its interior is seen at a glance, in a rough engraving in the margin of the advertising pages of this journal.

The valve or piston is peculiar, and is shown in the margin. The letter C



represents the packing in the end of the valve cut in the form of a T, and raised up out of its place; like all the rest of the packing, the best and thickest of sole leather is used after being well hammered. A is a piece of the same kind of leather drawn tightly into the edge of the valve. B, the button on the back-side of the valve, is represented as being fitted into a *recess* with two legs fitted into holes in the same, and sprung out about an eighth of an inch by means of spiral springs. When a pump is new, and the valve in its place, the button B is pushed up snug to the valve, and as the packing wears, the spring pushes the valve forward till the packing and edge of the valve at A is worn down to the edge in the recess at A. Some valves are made without this recess; in that case, the packing will not wear as long, as nothing wears but the leather; but of late an addition of metal has been added all the way on the back-side, and a part of the way on each end on the front side, to protect the leather and render it more durable; and therefore when it wears down, the metal on the back-side and two ends on the front edge as low as the metal at the recess at A on the front side, it will want packing.

The pump is powerful. A moderate application of force gives a liberal flow of water. We have seen a jet thrown some two hundred feet, through a discharging pipe of more than an inch in diameter. The stream was converted into spray, and fell upon the top of the palace like a shower of rain.

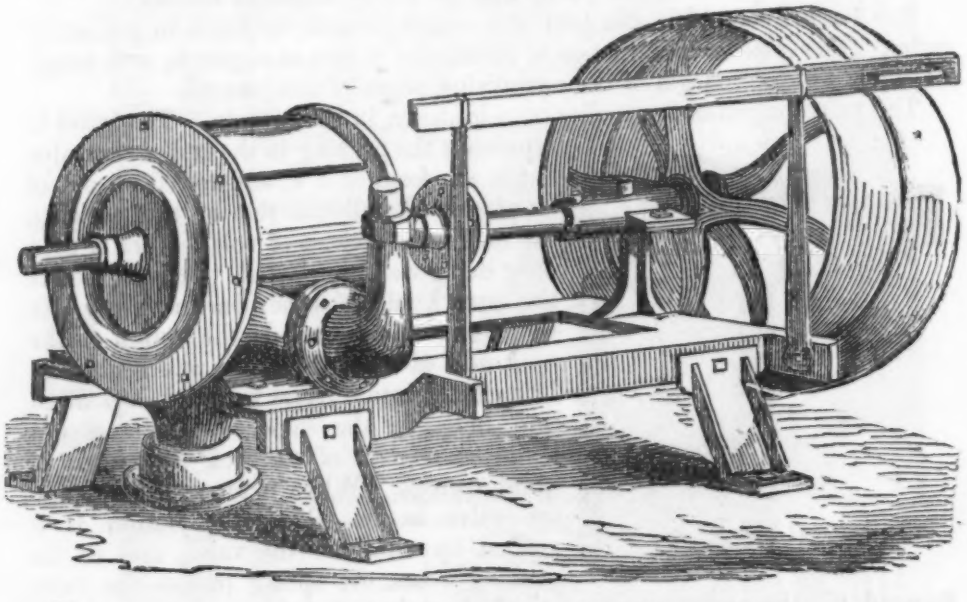
There are different sizes and patterns. One is designed for a domestic fire-engine. It is used for all ordinary purposes, wells, cisterns, etc. By a very simple arrangement, a hose can be attached to the nozzle and used for extinguishing fire about the premises, or watering the garden. By having a supply of hose on hand in some convenient place, where it could be attached in a moment, with one man to turn and one to manage the hose, in nine cases out of ten a building might be saved, not only from destruction by *fire*, but from being *flooded* with water by common fire-engines. A person having

one of these pumps, with sufficient length of hose to reach the top of hi building, if his neighbor's buildings are on fire, can mount his own an thereby save it from destruction.

The manner of putting up the above pump is as follows: By just erecting a standard, by mortising into the floor or platform a post (say 4 by 5 inches, braced well at the bottom with iron braces. The holder is then screwed on, so that when the pump is set in, the shaft will be 2 feet 8 or 10 inches high.

Another form is of bell-metal, for ships. It is extensively used in steamboats, and is found to answer a very useful purpose. This form is well adapted to machine-shops, furnaces, and small factories.

The following is one form of arrangement of this pump, showing the wheels for belts to drive the shaft or axle of the pump:



These pumps are made with the discharge either from the top or the side; that is, either perpendicular or horizontal; and one form of it, at least, which is 14 inches in diameter and 8 inches in depth, is provided with a flange for bolting on iron pipe.

One size is as follows: Inside diameter, 10 inches and 5-16ths; depth, $4\frac{7}{8}$ inches. Another, 12 inches diameter and 7 inches deep.

The following is an extract from the annual report of the officers of the State Lunatic Asylum at Trenton, N. J., for 1853, in regard to the manner of furnishing water for the building:

* * * A steam-engine of 12-horse power, constructed by Wm. Burden, of Brooklyn, N.Y.; a cylindrical boiler, with one 14-inch flue for generating steam, furnished by the firm of Vancleve & McKean, of Trenton; a forcing-pump, acting on the rotary principle of Cary's patent, Brockport, N.Y., and a cast-iron pipe six inches in diameter, through which the water is forced from the engine-house through the space of 1000 feet to the receiving-tanks, four in number, in the dome of the main building. It may also be mentioned that these tanks together, contain about eight thousand gallons. In addition to the foregoing, the ground about the spring from which the water is obtained, is situated seventy-two feet from the pump, and thirteen feet below it. * * * * * The apparatus is very efficient, raising water at easy

working speed, through the distance mentioned, one thousand and seventy-two feet, and with a perpendicular of one hundred and twenty feet, at the rate of ten thousand gallons per hour. The advantage of an apparatus capable of supplying water thus rapidly, is found in the economy of time required for its attendance, and also for its great efficiency in case of fire. In connection with the last mentioned application of its power, it may be remarked, that it is designed, by means of outlets, for attaching hose in the main and in the branch pipes, placed a few yards distant from the building, to be able at all times, and with short notice, to apply the whole force of the engine and pump, in supplying water at any point of the building required. This we regard as the best possible security against destruction or damage by fire, and would be of itself a sufficient justification of the entire expense incurred in the completion of the work.

The representation of the interior of this pump may be seen in the engraving annexed to an advertisement in that department of our journal.

DESCRIPTION OF A PIGGERY.

The following is a description of the Piggery of Dr. Morton, of West-Needham, Mass.:

Fig. 1 represents a front perspective view of the whole building and pig-yard. The building is 125 feet long by 14 wide, with open or outer pens in the rear, in the second story, opening into a yard. It is of two stories, with glass windows (protected with iron grates) to each pen, fronting the south, and is constructed on the south side of a hill, the lower story being built on an excavation made for that purpose, whereby the pens in that story (which are breeding-pens for winter or early-spring pigs) are protected from the cold northerly winds, and a suitable temperature maintained in them for breeding in the winter when desired, without the use of artificial heat, by the rays of the sun shining through the glass of the windows. By this manner of construction, in ordinary winters, there will be found to be sufficient heat maintained for breeding; but, if the winter should be unusually severe, artificial heat may be employed.

Fig. 2 is a plan of the upper story of the building and yard behind. A are the inner pens, and L the outer yards, the latter are in the yard or inclosure Y. Lot Y has a large shed to protect the manure, and communicates with a stream of water. The pigs enter the outer yards from the rear, and from thence to the inner pens, and, if desired, can be secured there by sliding doors which are provided to each pen, though not represented in the drawings. The passage B is four feet wide, and extends the whole length of the building. This intersects the entrance at the rear of the building, and serves as a convenient means of attending to the pigs, feeding, cleaning the pens, etc. E is the swill-room, which is 16 feet long, in which is contained a furnace and boiler, a swill-tub, G, or reservoir, into which the boiled provender is placed, a series of bins, K, which are for holding different kinds of grain, and a place for firewood. Cut through the floor of the swill-room is a hatchway, M, which is for emptying the swill from the reservoir or boilers to another reservoir in the lower story, where it will be convenient for feeding the breeding-sows below. S denotes stairway communicating with the upper and lower story. D, D, end-doors to enter passage B, B, B.

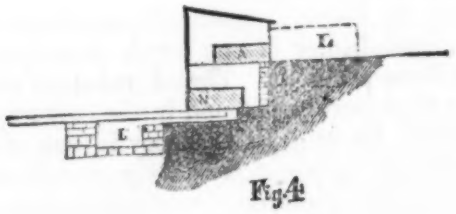


Fig.4

Fig.3

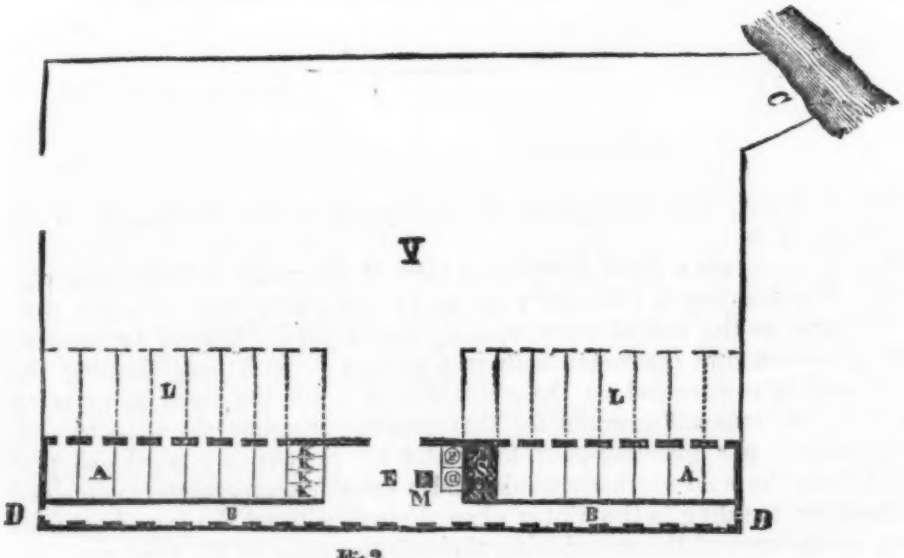


Fig.2

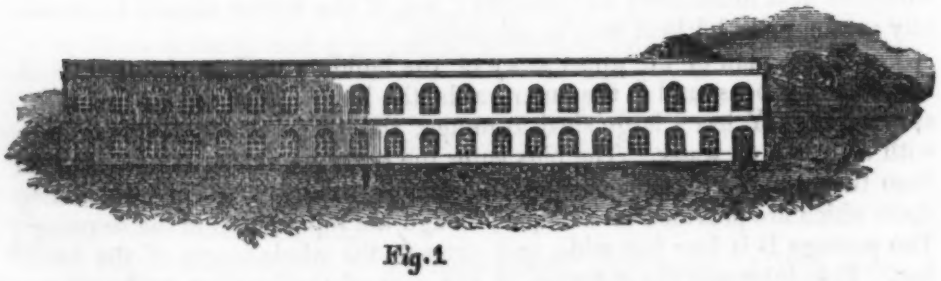


Fig.1

Fig. 3 is a plat view of the lower story, or breeding-pens. N are the pens which have no yard-pens. And the passage B, B, B, extends the whole length of the building, at the rear side, instead of at the front side, as in the upper story, so that the pigs get the full benefit of the rays of the sun through the windows. Those lower pens are entered at the doors A, A, from the front and through the passage B, B, at each end of the building; the pigs entering through either of these doors, pass into the long passage, B, and enter the pens through doors at the rear. S represents the stairs below, aside of which is the reservoir to receive food from the trap-door, M.

Fig. 4, a vertical cross-section of the building. A are the upper pens, and L the outer yards. N, the lower or breeding-pens. The floors of both stories slope so as to drain off the surplus liquid, and render the stalls or pens more easy to be cleansed. These slope in opposite directions: the lower one to the front, and the upper one to the rear of the building, as represented in Fig. 4. I is a reservoir located in front of the building, with suitable conducts leading from the building for draining the lower or breeding-pens. The upper pens are drained from the rear side.

CRYSTAL PALACE.

THE GREAT EXHIBITION is still open, and invites the lover of the useful arts, and the lover of the fine arts, to pass a day or two in its well-filled courts. This, as we have said before, and say now, in reference to its present condition, is no sham affair. There is no humbug about it. Yes there is, too—and the humbug is this, that some of so exquisitely fine taste, and such lofty ideas of what constitutes a show worthy of their notice, are yet to be found in our community, who never have and who never will see so fine productions, in various departments, as are exhibited to-day in the Crystal Palace. These people are themselves the victims of this humbug, this delusion, in imagining that they are acquiring a reputation for great knowledge of what is excellent and beautiful, while, in fact, their own neighbors do not know or care whether they have honored the palace with their presence or not. Others have no idea, at any rate, that a really cultivated taste keeps them away.

'But is the Exhibition still worth seeing?" Certainly it is. We confess to our sad and gloomy reflections, when we saw those beautiful tables of our friend La Hoche deserted by him, and deprived of his rich display, the like of which can be seen nowhere else in this country, and the superior of which can not be seen in any country. We were, we admit, positively sad, on our first visit after his departure. The Gobelins, too, were missed, and *that* head of St. John, (none of which, nor any thing to compare with either of these, those exquisites that did "not care to visit" the Crystal Palace, ever saw, or ever will see,) and all these being almost literally side by side of each other, and near the Sixth-avenue entrance—always our entrance—we felt that glory had indeed departed. The beautiful display of silver ware has also, much of it, been removed. Here is certainly a loss. BUT WHAT REMAINS? Acres of the products of finished art; acres of elegant display, of useful inventions, of the best productions of this and of other lands. The statuary is better than that of any gallery in this country. The paintings are superior to any gallery in this country. The ten thousands of things, from the flower composed essentially of diamonds to the "centre-piece" of solid silver; from the watch no larger than a half-dime to the huge steam-engine; from the chair suited to a child's doll, to the best and gayest coach; from the pocket-knife and pocket-pistol through all the gradations to the scythe and the field-piece; from the artificial singing-bird to the church organ; these and others all are there, whether composed of silk, linen, cotton, wool, wood, iron, silver, or gold. All metals are there, and all minerals.

We have referred to what has been removed. Let us now refer to what

has been added. "Four hundred and twenty-nine exhibitors" have contributed toward a new supply of goods. Among these are an extensive show from China, and another from ancient Egypt; basso-relievos, medallions, etc., of Thorwaldsen and other eminent sculptors; elegant carvings in marble; work-boxes, dressing-cases, pencillings, etc., etc. There are also many machines, of far more interest than those taken away, and paintings of far greater merit than most of those removed. PEALE'S COURT OF DEATH used to form an exhibition of itself. It is now in this gallery. But few statues have been removed, though among these were those of the world-renowned Powers. Even here, however, we have a tolerable balance. FLORA, by Crawford, is an exquisite piece of art, unlike all others in the Crystal Palace, and not inferior to any of them. Other specimens of statuary are also among the new entries. In the mass of miscellaneous articles, the additions are too numerous for special reference.

The management is efficient. The arrangements in the building are improved. Refreshments are on sale in various parts of the building, so that no one has a monopoly. Soda-water, ice-creams, etc., may be had on all sides. Don't fail to visit the Crystal Palace.

SCULPTURE AND SCULPTORS.

WE now come to the fifteenth century, and find a more numerous list of names, which will live, with the few already spoken of, as long as art shall exist. In this century, sculpture and painting reached their highest stage of perfection. No brighter names have since eclipsed the glory of this century, nor do we believe such ever will appear.

Antonio and Piero were two brothers born in humble life, differing in age but a single year. The former was apprenticed to a goldsmith. He soon outstripped his companions and became the favorite of his master. To him was committed the execution of valuable works, and the setting of rare and precious stones. He also discovered wonderful art in making figures in silver and bronze. Some of the bronze sculpture on the doors of St. Peter's at Rome, was the work of his hand, and some portions of the celebrated door of San Giovanni at Florence, described in a former number. This was the door in reference to which Michael Angelo exclaimed, "This is worthy of being the gate of Paradise." Antonio afterward applied himself to the study and practice of painting, and he became an excellent painter. He and Piero worked jointly.

ANDREA DEL VERRECHIO was the master of Leonardo da Vinci, and he was commissioned to paint a picture of the Baptism of Christ by John, for the monks of Vallambrosa, having previously painted one for the nuns of San Domenico. When near its completion he was taken sick, and being unable to finish it at the time specified, "I commission thee," said he to Leonardo. "to do thy best on this work, for I have promised it at a certain time, and I see no prospect of being able to accomplish my promise." Accordingly Leonardo tremblingly seized the brush, but his hand grew steady as he painted. "It is for my beloved master I implore skill and power for this deed," said he, as he knelt before the crucifix.

"The work is done, father," said Leonardo; "it only waits for your correction." Andrea, as soon as he was able, was conveyed by his pupils to his

studio. At first, he looked upon the picture in silence. He then threw his arms around Leonardo, as he knelt beside him, and burst into tears. "My son, I paint no more. To thee I commit my pencil and pallet. Thou shalt increase, but I shall decrease;" and from this time he devoted himself to sculpture, united with architecture.

The first great work of his, in this department, was a *San Tommaso*, in bronze. The incredulity of Thomas is perfectly depicted; and also his desire to assure himself of the fact related to him, is expressed in his countenance. There is a mixture of tenderness and of veneration in the manner in which he lays his hand on the side of the Saviour. Soon after this, he was commissioned to execute a work which is still extant, in Rome. A noble lady had died suddenly, in giving birth to an infant, and Andrea was commissioned by her husband to execute a work worthy of the subject. He represented the lady on the stone which covered her tomb, rising with her infant. There is the beauty of an ascending spirit in this figure, to which he added three angels, representing three virtues. This was in marble. He afterward accomplished many works. He was summoned to Venice to execute an equestrian statue, where he took a violent cold and died, at the age of fifty-six.

Leonardo da Vinci was born at Venice in 1452. He was the natural son of Pietro da Vinci, and was brought up in his family. He was less known as a sculptor than as a painter and architect. He was the pride of Andrea del Verricchio, who, as already described, taught him the rudiments of painting. He excelled also in music and in eloquence. He was called to Milan to paint the Visconti palace. His first important work, after his removal to that city, was the celebrated equestrian statue of Francisco Sforza the First, which he commenced 1483. About the year 1485 or 1486, he was selected by Ludovico il Moro, as the founder and director of the Academy of Art, established by that prince, and it was while he was in his service that he painted his celebrated "Last Supper."

The *padre*, Laca Paciolo, the friend and companion of Leonardo, playfully alludes to his name as indicative of his merits, in a phrase the meaning of which is, "Vinci, in sculpture, casts, and painting, verifies his name."

It is generally supposed that Leonardo introduced the art of engraving on wood and on copper. He died in the arms of Francis the First, at the age of seventy-five, universally esteemed and regretted.

Rafaello d'Urbino was born at Urbino, on Good Friday, May 28, 1483. His father, Giovanni Santi, a painter of some merit, died when he was but eleven years old. He was early apprenticed to Pietro Perugino, at Perugia, a painter of distinction, and his earliest works exhibited remarkable genius. Among these are the Coronation of Mary, now in the gallery of the Vatican, painted in 1502, and the Marriage of Mary and Joseph, called the *Sposalozio*, done in 1504, which is now the chief ornament of the gallery of the Brera at Milan. The latter is taken, with some alterations, from Perugino.

Some admirable pieces of sculpture are ascribed to him, though it is as a painter that he stands unrivalled. Of this branch of art, as illustrated and dignified by his pencil, we shall take occasion to treat hereafter, when we exhibit, more in detail, Painters and Paintings, as we now purpose.

It is not easy to write a single page that shall be a worthy tribute to this great man. A volume is required. We can now give but a very meagre sketch, which we shall amplify hereafter.

In 1514, Raphael was appointed by Pope Leo X. as architect of St. Peter's, and shortly afterward intrusted to him the task of executing upon paper

a restoration of ancient Rome, after the existing remains of the city, and the manuscript accounts of it, still extant. His subsequent history is full of interest. His plan for St. Peter's was abandoned at his death, and his drawings for the restoration of ancient Rome are lost.

Michael Angelo Buonarroti was born at Arezzo, in Tuscany, March 6, 1474. His father, Lodovico di Leonardo Buonarroti Simoni, was the Governor of Caprese and Chiusi. At the proper age, he was sent to a grammar-school at Florence, to receive the rudiments of his education. But instead of being attached to books, he was fascinated by painting, and a pupil with whom he was acquainted, then receiving instruction in this department, lent him designs to copy, and encouraged and assisted him. A head was given him to copy, and so well was his task executed, that he took his own copy to the person from whom it was borrowed, and the difference was not, at first, perceived.

In April, 1488, he was apprenticed to Domenico Ghirlandaïo, and his brother David, painters, for three years, at six florins for the first year, eight for the second, and ten for the third, an honorable attestation of his abilities. Usually premiums were not paid but were received by instructors.

At about this period, a garden was established in Florence by Lorenzo de Medici, which he amply supplied with antique statues, basso-relievos, busts, etc., to which Michael Angelo had free access, and it became his favorite school. He made models first in clay, and afterward in marble.

So great was the talent displayed by the youth, that Lorenzo furnished him with every facility for practice within his power. He sat at his table as his own son, and was introduced to men of rank and genius. The death of Lorenzo, in 1492, deprived him of his protector, and he returned to his father's house.

But ere long, Piero, the son and successor of Lorenzo, though destitute of his taste and talent, renewed the offer to Michael Angelo, and he again became a member of this family. Soon after, he left Florence, and spent a short time in Bologna, where he executed two statues, in marble, for the church of St. Domenico; a St. Petronio, and an angel kneeling, holding a candelabrum. Each of these was three palms (about 26½ inches) in height. Thence he returned to his father's house, and made a statue of an infant St. John sleeping, and also a sleeping Cupid. This last was purchased by an acquaintance, who having buried it awhile in the earth, dug it up and sold it in Rome as an antique, (then much prized,) for 200 ducats. The deception, however, was discovered, and the money reclaimed. When it was discovered that Michael Angelo was the sculptor, great commendation was bestowed on him, and he was advised to go to Rome. He did so, and there he made a statue of Cupid, now lost, and of Bacchus, which is in the gallery at Florence. He also executed a group of the Virgin and Dead Christ, or "La Pieta," which was very much admired. This now forms the altar-piece in a chapel of St. Peter's. Several copies were made of it.

He also executed a colossal figure of David, made from a block of marble which had been provided for another purpose, but had been spoilt, as it was supposed, for any purpose of sculpture. This, in 1504, was placed in the Piazza, in front of the Palazzo Vecchio, where it now stands. He afterwards executed another statue of David, in bronze, which was sent into France, and a group in bronze, of David vanquishing Goliah; also a statue of St. Matthew, for the cathedral at Florence. Soon after, he returned to Florence, but on the accession of Julius II. was invited back to Rome, and it was proposed by the new pope that he should build a mausoleum. worthy of himself

and his nation. The difficulty of finding a place suited to so grand an affair, led finally to a determination to rebuild St. Peter's, then a very old church, and this is the origin of that edifice, which took one hundred and fifty years to complete, and is now the grandest display of architectural splendor in the world.

The next work of importance in which he was engaged, was in drawing the cartoons for the paintings of the walls of the Sistine Chapel. The following incident is worthy of notice. The architect of St. Peter's was ordered to construct a scaffolding for this work, to be painted in fresco. When the scaffolding was finished, Michael Angelo found it extremely objectionable, particularly from certain holes pierced in the ceiling for cords to pass through to suspend a part of the machinery. He asked the architect how the ceiling could be completed if they were suffered to remain. To which he answered, "It is impossible to avoid making them, and the remedy must be a subsequent consideration." This created a dispute, and Michael Angelo applied to the pope, who gave him permission to take it down and erect another in its stead. He then designed and constructed one so complete, that Bramante afterward adopted it in the building of St. Peter's, and it is most probably that simple and admirable piece of machinery which is now used in Rome whenever there is occasion for scaffolding to repair or construct the interior of public buildings. This invention Michael Angelo gave to the poor man whom he employed as his carpenter, and from the commissions he received for making others of the same construction, he realized a small fortune.

The cartoon of the Last Judgment was completed in 1541. Persons came from the most distant parts of Italy to see it, and the public and the Court were rivals in admiration.

Michael Angelo, though not the first architect of St. Peter's, was appointed to that place on the death of San Gallo, in 1546. He accepted the office against his will, and on the condition that he should receive no salary. He changed essentially the plans that had been made for that splendid structure, and his successors did not vary materially from those which he had prepared. He lived long enough to see the walls erected to the base of the dome. The lantern of that church was modelled from that devised by Brunnelleschi, for the church of St. Maria del Fiore, which we described in a former number.

Further incidents of great interest in the life of this wonderful man, must be reserved for a future opportunity. He died in 1564.

LIST OF STATE FAIRS FOR 1854.

Ohio,	Newark,	September	19—22.
Michigan,	Detroit,	September	26—29.
Illinois,	Springfield,	September	12—15.
Indiana,	Madison,	October	4— 6.
Iowa,	Fairfield,	October	25.
Wisconsin,	Watertown,	October	4— 7.
Pennsylvania,		September	27—29.
New-York,	New-York City,	October	3— 6.
Vermont,	Brattleboro',	September	12—14.
New-Hampshire,		October	3— 6.
Georgia, (So. Central,)	Augusta,	October	23—28.

THE PRINCIPLES OF THIS JOURNAL.

THE following were among the principles advocated by our learned predecessor, J. STUART SKINNER, the founder of this journal, as set forth in his prospectus; and this policy has been its leading and favorite topic of discussion to the present day.

"The immediate and ever-increasing tendency of a *national* policy which shall thus encourage American labor, generally, will be to raise up everywhere thriving and prosperous *consumers* of the fruits of the soil, instead of dispersing far and wide those who cultivate the soil, until, in process of time, their lands in the far west shall be exhausted, and themselves ruined in the new States, as their fathers have been in the old, by loss of time and expense of transportation over the bad roads that always belong to sparse populations, leading to distant markets already overstocked. Until we can have such a policy thus widely spread, and thus deeply rooted, not in the ephemeral success of a party, but in the mind and affections of the nation, it will be in vain for the friends of agriculture to go on recounting to farmers, how large crops may be made on small spots of land, and great masses of fat accumulated upon single bullocks. In vain will it be to tell, again and again, how to make the most fragrant butter; how to insure the most perfect fruit; how and when to sow and to reap! In vain will societies go on exciting, at long intervals, a fitful and transient spirit of emulation by the award of silver cups, and paper diplomas, if all the time we fail to encourage, in proximity to the plough, the growth of thriving, industrious, and happy communities, to consume the products of the plough; laboring men and women, in all the other great branches of industry, who, being able, will ever be ready to consume our cotton and sugar, our butter, fruit, corn, meat, vegetables, and all the various productions that the most improved agriculture and horticulture can supply.

It is worse than idle to *talk* about the admitted value of more intelligence for the landholder in the prosecution of his business; what he first needs, for all that his land can be made to produce under the highest improvement of which it is susceptible, is to have *stable and reasonably-remunerating markets near at home*, that he may save for the improvement of his land—*his* great machine of production—his manufactory—the time and the substance which are now wasted on the road and for ever lost, in the act of searching for customers to take his produce at whatever it will bring. Let the demand be created, and the supply of intelligence, as of all other things, will follow as a matter of course. With increase of reward, and with that only, will come discovery and a general increase of knowledge; and with general and well-remunerated increase of intelligence, will come a general improvement of the soil, and with it wealth, population, education, power, civilization, and peace; and hence arises, in our judgment, the duty to show, as far as we are capable, the natural and mutual dependence which everywhere subsists between the Plough, the Loom, and the Anvil—between the farmer who digs his corn and the ironmonger who digs his ore, and the miner who digs his coal out of the ground—to the end that all the industrial employments of our own country, being bound together by one common interest, may each one give its influence to the maintenance of a policy conservative of the common welfare of all. To this end, then, friends and followers of the plough, will be directed the future labors of one, in whose writings, such as they have been for thirty years, in behalf of American agriculture, you have never seen, nor ever will see, a line written for narrow party purposes."

A SPICE ORCHARD

In one of his letters from the East, Bayard Taylor gives an account of a visit to a nutmeg-orchard on the island of Penang:

"On our return to the ship, we visited a nutmeg plantation. The trees, which are from twenty to thirty feet in height, are planted in rows, at intervals of about 20 feet. The leaf is dark-green and glossy, resembling that of the laurel, and the fruit, at a little distance, might be taken for a small russet-colored apple. When ripe, the thick husks split in the centre, showing a scarlet net-work of mace, enveloping an inner nut, black as ebony, the kernel of which is the nutmeg of commerce. The clove-tree, not now in its bearing season, has some resemblance to the nutmeg, but the leaf is smaller, and the foliage more loose and spreading. As we drove through the orchard, the warm air of noon was heavy with spice. The rich odors exhaled from the trees penetrated the frame with a sensation of languid and voluptuous repose. Perfume became an appetite, and the senses were drugged with an overpowering feeling of luxury. Had I continued to indulge in it, I should ere long have realized the Sybarite's complaint of his crumpled rose-leaf."

THE UNIVERSAL EXHIBITION OF 1855 AT PARIS.

The *Moniteur* publishes at last the general regulations of the Universal Exhibition, which are very liberal. It will commence on the 1st of May and end on the 31st of October, 1855.

Foreign governments are invited to appoint committees, to whom the articles to be exhibited have to be submitted for examination. The French and foreign articles will be received at the Palais de l'Exposition from the 15th of January until the 15th of March, 1855.

The foreign articles will be forwarded and returned at the expense of the state from and to the sea-ports of France, duty free. The prices of articles can be affixed. The articles of each nation are to be exhibited altogether. Inventions and designs are protected from piracy.

Important Railroad Movement.—The adjourned meeting of the committee of the seven railroad companies connecting Boston with the two Canadas and the Lakes, (comprising Lowell, Nashua, Concord, Northern, Vermont, Central, Canada, and Ogdensburg,) was recently held in Boston, and after an harmonious and animated discussion, a committee was appointed, with full power to make arrangements for the purchase of 1000 additional freight-cars, on joint account, for the accommodation of the rapidly-increasing *through* business of the entire line, which it is believed can be doubled by this sensible and business-like arrangement. The movement will be calculated to improve both the intrinsic and market value of the bonds and stock of the Central and Ogdensburg roads, and enable the other five companies to pay larger dividends henceforth.—*Gran. Farmer and Visitor.*

EDITORS' JOTTINGS AND MECHANICAL RECORD.

THE MONUMENT AND THE FUND MOVEMENT.

Our readers are apprized of this effort, as laid before them in the late numbers of our journal. That effort is going forward as rapidly as possible, although there are more difficulties in prosecuting every project of this sort than is dreamed of in the philosophy of any who are inexperienced. Were these difficulties well appreciated, every subscriber in prosperous circumstances who has not yet responded to our call, as some have done, would sit down forthwith and remit us the ten, five, or two dollars, (or even one dollar, as a free donation,) to so great and noble an object. How many hundred of you will profit by this hint?

But we took our pen for the purpose of saying that while we give the biographical sketch, promised in a recent number, of the late John Stuart Skinner, we have found it utterly impracticable to have the PORTRAIT ready for this issue. We have a copy from which it is to be taken, perhaps with some amendments, so as to give a view that shall be quite life-like, and worthy of careful preservation. As soon as these points can be gained, the picture will be issued.

Musical Congress, Crystal Palace.—The past month has introduced a new feature, and a very delightful one, in this great Exhibition. A Musical Congress has been assembled for several successive evenings, filling those spacious courts with the harmony of music. On the first evening, June 15th, more than 29,000 tickets were sold. The vocal department was about 1800, and the orchestral about 380. Never was a more successful concert given. The great Jullien was the chief conductor, and exhibited himself the same genius, competent to any style of performance, that he has been previously acknowledged to be in his own concerts in this and in other cities.

The sacred choruses were grand beyond description, and the lighter ones well performed and duly appreciated. The solos, duets, etc., could be heard by only a few, comparatively, but were in good style. The series is not closed, while we write this hasty notice, (June 17th,) and hence we can not be so minute or so general as we can hereafter. We consider this attempt or experiment as perfectly successful, and hope it may again be repeated in the fall and winter. We shall again refer to this great and successful enterprise.

Running-Gear for Wheel-Carriages.—The Clinton *Courant* notices a very important improvement in the fashion of running-gear for wheel-carriages. Its advantages are thus set forth:

"Firstly, the wagon to which it is attached can be turned, with perfect comfort to the horse, *within a circle of the diameter of four feet*—a great desideratum with city travellers. Secondly, the horse is brought nearer to his work, and does it with greater ease. Thirdly, it is much less liable to disarrangement, and safer than the ordinary gearing, beside doing away with the rattle and clatter of those now used. Fourthly, getting in and out of the vehicle is rendered much easier and more pleasant, as it can be done without touching a wheel. Fifthly, the springs are so arranged that one or four persons may ride without altering their bearing; and in either case, the motion is more pleasant and regular than that of any other wheel-carriage in which we were ever before seated. To all these advantages is added the fact that there is no appreciable difference in the cost between the new and old arrangement."

Fencing out the Curculio.—W. Manice, of Long-Island, constructed many years ago, a tight board fence around his plum-orchard, about nine feet high, with tight board gates. The curculios did not fly high enough to enter, many striking the sides of the fence and falling outside. An acquaintance who visited the garden when in full fruit, informs us that all the trees *within* the inclosure were heavily loaded with plums; at the same time he observed a tree outside that had lost every specimen.

GIGANTIC BORING-MACHINE.—It is almost within the memory of middle-aged men, when the most of the metal-boring in Scotland was wrought by hand-wrought drills, or by small turning-lathes. The many purposes to which iron is now applied, and the wonderful size to which all parts of machines, especially steam-engines, have grown, have put all such petty and primitive tools out of mind as well as out of sight. A mere boring tool, now-a-days, is a much larger machine than many steam-engines were not long ago; and the one which has led us to make the above remarks is much larger than many steam-engines now in operation. This magnificent tool, which has been made for one of Mr. Robert Napier's engine-shops, in Glasgow, Scotland, weighs no less than 30 tons, and stands 25 feet high. The height of the entablature of the frame is 15 feet, and the width is no less than 14 feet. The frame-work of this grand boring-machine is composed of two upright columns, surmounted by an elegant entablature, below which the wheels, which give power to the boring, are supported on a cross-beam of great size and strength. This tool, which can work at all speeds, from one revolution in two and a half minutes to sixteen revolutions in one minute, is capable of boring a hole in solid iron of ten inches, or a cylinder of ten feet diameter, and can take any feed, from one fortieth to one eighth of an inch per revolution of the spindle; and it is capable of boring a hole seven feet eight inches in length. This tool is to be used for boring and facing malleable iron cranks, cross-heads, connecting-rods, cylinders, air-pumps, etc., for marine-engines.

AN IMMENSE BRIDGE.—A correspondent of the *Chicago Press* thus describes the great bridge at Peru, Ill., on the Illinois Central Railroad:

"The great bridge of the Illinois Central Railroad, 3500 feet, or two thirds of a mile in length, is rapidly approaching completion; the cars, however, will not run over it before October. This, your readers are aware, is the greatest work of the kind in the West, and is one of the seventy-five truss-bridges now under contract by the enterprising firm of Stone & Boomers, of Chicago. It reaches from bluff to bluff, is 75 feet in height, contains upward of 1,000,000 feet of timber, all worked up in Chicago, and how much iron and stone I know not. The mason work is not excelled, and is of the Joliet hydraulic-rock. The top is to be covered with tin and made water-tight; the trains of cars are to run on top of all; beneath them and between the frames pass the roads for wagons, and underneath all, pass the river and canal. An ornamental railing is to be placed each side of the track."

ATTACHING CAR-WHEELS TO AXLES.—T. G. Walker, of West-Farms, N.Y., has taken measures to secure a patent for an improved mode of securing car-wheels to their axles—whereby the wheels may be adjusted upon the axles—moved so as to suit the broad or narrow gauges of the railroads without moving the axles from their boxes. The invention consists in having a screw-thread cut on each end of the axle—a right-hand thread on one end, and a left-hand thread on the opposite end of the axle. The centres of the wheels have circular apertures through them, with reversed threads of screws to those on the ends of the axles. The wheels are secured at the required distance apart by means of screw-keys, which fit in slots in the axle. By unscrewing the keys, the wheels can be readily adjusted to suit different widths of the track, such as where a narrow track locks with a broad gauge, and *vice versa*.

CORN-PLANTERS.—Erastus Holt, of Wheaton, Ill., has made an improvement in corn-planters, which consists in arranging a vertical sliding receptacle under the discharge of the hopper, and providing a receptacle with a vertical plunger or discharger, and operating the whole by the action of the propelling-wheels through a spring and cam. The receptacle is constructed and arranged so as to move with the plunger and serve as a cup for containing the seed, until its upper end arrives at the top of the second chamber of the hopper, when it remains stationary, and allows the plunger to rise separately and force seed out of the same, and discharge them into the drill-tube, to be deposited in the ground. Measures have been taken to secure the patent.

NATURAL PRINTING PROCESS, (Naturselbstdruck.)—Under this term Louis Auer, of the Imperial Printing-office at Vienna, has patented a process invented by himself, in conjunction with Mr. Andrew Worring, overseer of the same establishment, "for creating, by means of the original itself, in a swift and simple manner, plates for printing copies of plants, materials, lace, embroideries, originals or copies, containing the most delicate profundities or elevations not to be detected by the human eye," etc. A pamphlet giving a description of this discovery, and a series of specimens, has reached us. The examples consist of an impression from a fossil-fish, from the agates, the leaves of trees, several plants, mosses, algæ, and the wing of a bat. These are all printed in the natural colors of the objects they represent; and it is difficult to conceive any thing more real than these productions. The general character of the process is told in the following pithy manner by Louis Auer, in the introductory paragraphs of his pamphlet:

"*Query.*—How can, in a few seconds, and almost without cost, a plate for printing be obtained from an original, bearing a striking resemblance to it in every particular, without the aid of an engraver, designer, etc.?

Solution.—If the original be a plant, a flower, or an insect, a texture, or, in short, any lifeless object whatever, it is passed between a copper-plate and a lead-plate, through two rollers that are closely screwed together. The original, by means of the pressure, leaves its image impressed with all its peculiar delicacies—with its whole surface, as it were—on the lead-plate. If the colors are applied to this stamped lead-plate, as in printing a copper-plate, a copy in the most varying colors, bearing a striking resemblance to the original, is obtained by means of *one single* impression of each plate. If a great number of copies are required, which the lead-form, on account of its softness, is not capable of furnishing, it is stereotyped, in case of being printed at a typographical press; or galvanized, in case of being worked at a copper-plate press, as many times as necessary; and the impressions are taken from the stereotyped or galvanized plate instead of from the lead-plate. When a copy of a unique object which can not be subjected to pressure, is to be made, the original must be covered with dissolved gutta percha, which form of gutta percha, when removed from the original, is covered with a solution of silver, to render it available for a matrix for galvanic multiplication."

This process is also applicable to the purpose of obtaining impressions of fossils, or of the structure of an agate or other stone. In all the varieties of agate, the various layers have different degrees of hardness; therefore, if we take a section of an agate, and expose it to the action of fluoric-acid, some parts are corroded, and others not. If ink is at once applied, very beautiful impressions can be at once obtained; but, for printing any number, electrotype copies are obtained. These will have precisely the character of an etched plate, and are printed from in the ordinary manner. The silicious portions of fossil, and the stone in which they are imbedded, may in like manner be acted upon by acid; and from these either stereotyped or electrotyped copies are obtained for printing from. We learn that Mr. Bradbury, of the firm of Bradbury & Evans, has availed himself of this invention, and that he is now preparing a series of botanical specimens for publication; so that, very shortly, the public will be in possession of examples of this beautiful process. It is not a little singular, that the workers in German silver and Britannia metal, at Birmingham, have for some time been in the habit of ornamenting the surfaces of these metals by placing a piece of lace, no matter how delicate, between two plates, and passing these between rollers. In this way every fibre is most faithfully impressed upon the metal. We are not aware, however, that any attempts to print from these impressions have yet been made at Birmingham.

BRILLIANT WHITEWASH.—Many have heard of the brilliant stucco whitewash on the east end of the President's House at Washington. The following is a receipt for making it, with some additional improvements learned by experiment:

Take half a bushel of nice unslaked lime; slake it with boiling water; cover it during the process to keep in the steam. Strain the liquid through a fine sieve or strainer, and add to it a peck of clean salt, previously well dissolved in warm water; three pounds of ground rice, boiling to a thin paste, and stirred in boiling hot; half a pound of powdered Spanish whiting, and a pound of clean glue, which has been previously dissolved by first soaking it well, and then hanging it over a slow fire, in a small kettle, within a large one filled with water. Add five gallons of hot water to the whole mixture, stir it well, and let it stand a few days, covered from the dirt. It should be put on right hot; for this purpose, it

can be kept in a kettle on portable furnace. It is said that about one pint of this mixture will cover a square yard, if properly applied with a brush as in painting. It answers as well as oil-paint for wood, brick, or stone, and is cheaper. It retains it brilliancy for many years. There is nothing of the kind that will compare with it, either for inside or outside walls. Coloring matter may be put in, and made of any shade you like.

Spanish-brown stirred in will make red or pink, more or less, according to the quantity. A delicate tinge of this is very pretty for inside walls. Finely pulverized common clay, well mixed with Spanish-brown before it is stirred into the mixture, makes a lilac color. Lamp-black, in moderate quantities, makes a slate color, very suitable for the inside of buildings. Lamp-black and Spanish-brown, mixed together, produce a reddish stone color. Yellow ochre stirred in, makes yellow-wash, but chrome goes farther, and makes a color generally esteemed prettier. In all these cases the darkness of the shade will of course be determined by the quantity of coloring used. It is difficult to make a rule, because tastes are very different; it would be best to try experiments on a shingle, and let it dry. We have been told that green must not be mixed with lime. The lime destroys the color, and the color has an effect on the white-wash, which makes it crack and peel. If a larger quantity than five gallons is wanted, the same proportions should be observed.

Interesting Presentation.—We are pleased to record that our esteemed old friend, Mrs. Partington, has been presented with a new corn-broom by her grocer, as a mark of esteem for the prompt manner in which she has paid her bills. The presentation was made in the front part of the shop, amid a crowd of orange-baskets and sugar-barrels, and the ceremony was marked by peculiar interest, as was the skirt of Mrs. Partington's bombazine dress with an estray puff of flour. The grocer, handing the broom at arm's-length over the counter, addressed her—his eyes filled with tears, and his mouth with half an orange—as follows: "Take the broom, mem, and with it the assurance of my distinguished consideration." Mrs. Partington took the broom in her fingers, and, with evident emotion, said, at the same time looking at Ike, who was peering wistfully into the orange-basket, "I thank you for the broom, and I shall never fail to forget the doughnut." She meant donor, and Ike said she did say so; but the grocer, who was a gross man, thought differently. The broom, on one side of the handle, bears, on a small, square, yellow piece of paper, the inscription, "Half doz. corn-brooms, made and warranted by the Harvard Society, and for sale by grocers generally;" on the other—nothing at all. The gift was a beautiful tribute of groceries to worth, and the story which afterward "got round," that she had paid two York shillings for the broom, and that the presentation was all a sham, was an outrageous libel, that had its origin in the meanest envy.—*Post.*

The Reading Railroad.—This company are relaying a portion of their track with new rails. Some four miles between Reading and Birdsboro' have been laid with a newly-invented English rail which requires no wooden sills, but is placed upon a bed of broken stone, and secured by wrought-iron ties extending across the track at the joints of the rails, say about eight feet apart. The rails are made with very broad flanges at the base, thus spreading upon the ground, and intended to support themselves without the aid of sills. They have been laid as an experiment, and the heavy tonnage of the road will doubtless put them to a fair test. If found to answer, their adoption will save a large item of cost, in the matter of wooden sills.

Tubular Iron Bridge.—The construction of the great tubular iron bridge across the St. Lawrence, opposite Montreal, has commenced. One of the immense coffer-dams, made of timber, in which the piers are to be built, has been launched and towed to its place, and others are in progress. Some 1500 men will, it is said, be employed on the bridge during the summer.

Cashmere Shawls.—To make one of the finest Cashmere shawls requires the work of a family for a lifetime. They sell in Cashmere itself for five thousand dollars.

A NEW QUILTING-FRAME.—The *Michigan Farmer* describes a new quilting-frame, which economizes space, and if it works as well as is claimed for it, it must be practically admired by the ladies. It is compared to a table-frame two and a half feet wide by nine and a half long. Two or three inch scantling placed eight-square, or round, is used for the side-rails. On the ends of these is made a round tenon, one and a half inches in diameter, and one inch longer than the thickness of the end-rails at the shoulder of the rail; on one end of each a small wray-wheel, made of cast-iron, or thick sheet-iron, may be nailed to the end of the tenon. The wheel is about four inches in diameter. A small dog, made of nail-rod, should be attached to the end of the frame, so as to play on the wray-wheel. Along the side-rails a strip or list of cloth is nailed, to which the quilt is stitched. When the quilt is put together, sew one side to the listing of one rail, and roll it on so far that the other side of the quilt may be fastened to the other rail, and the work is ready. As fast as quilted, roll up the wray-wheel and dog, holding all in its place. The frame is light, portable, and takes up but little space compared to the old-fashioned, long-armed contrivances.

WEST-LINCOLN AGRICULTURAL AND HORTICULTURAL SOCIETY.—At the annual meeting of the West-Lincoln Agricultural and Horticultural Society, held at Lewiston, Maine, 8th inst., the following officers were elected:

President—Elijah Barrell, Greene.
Vice-Presidents—Wm. Neal, Lisbon; Daniel Pierce, Poland.
Recording Secretary—Wm. R. Wright, Lewiston.
Corresponding Secretary—Wm. R. Frye, Lewiston.
Treasurer—Mark Lowell, Lewiston.
Agent—E. Ham, Lewiston.
Librarian—Calvin Record, Danville.
Trustees—John M. Frye, Lewiston; Augustus Sprague, Greene; Robert Martin, Danville; Francis F. Purrington, Topsham; J. Strout, Durham.

AMERICAN WIRE.—In many branches of iron-manufacture, our country has advanced with rapid strides, and now maintains a distinguished position. This is especially the case with the manufacture of iron wire. There are some packages of wire on exhibition at the Crystal Palace, which deserve more than a passing glance from every visitor. They were manufactured at the Trenton Iron Works, Trenton, N. J. In quality they are unsurpassed, and in variety they show the perfection of machinery used in their manufacture, and the ductility of the metal employed. There are some specimens, we should judge, about half an inch in diameter, while there are others so fine and beautiful they resemble silver hair. In one package of two pounds there are six thousand yards; and in another package of one pound twelve ounces, there are four thousand yards, or one hundred and forty-three and a half yards in a single ounce of iron.—*Scientific American.*

GREASE FOR CARRIAGE-WHEELS.—This composition prevents friction to a great extent. Its cost is not comparatively greater than the materials often employed for the purpose; it is not changed by heat, and hence does not liquify and flow away from its proper place:

Black lead pulverized,	- - - -	50	parts by weight.
Hog's lard,	- - - - - - -	50	" "
White soap,	- - - - - -	50	" "
Quicksilver,	- - - - - -	5	" "

Amalgamate well the lard and mercury by rubbing them together for a long time in a mortar; then gradually add the black lead, and lastly the soap, mixing the whole as perfectly as possible.

SPEED OF LIGHTNING.—A wheel made to revolve with such velocity as to render its spokes invisible, is seen, when illuminated by a flash of lightning, for a moment, with every spoke distinct, as if at rest. The reason of this is, the flash has come and gone before the wheel had time to make a perceptible advance.

METEORGRAPH.—Prof. Webster, of the Portsmouth, Va., Institute, has invented a nicely-contrived, but simple instrument, which he calls a Meteorgraph, or practical clerk of the weather. It contains a barometer, pluviometer, hydrometer, and anemometer, and writes down or records with accuracy, the various phenomena of the weather, such as the pressure of the atmosphere, temperature, amount of rain and vapor, and the force and direction of the wind. This instrument will prove a valuable assistant to the extensive system of meteorological observations settled upon by the late scientific conference at Brussels.

GENERAL AGENCY.—The publisher of *The Plough, the Loom, and the Anvil*, believing it in his power to be of essential service to the readers of that journal, in the purchase or sale of various articles, and the transaction of various kinds of business, would announce to them that he is ready to execute any such commission which he may receive, including the purchase of books of any description; implements connected with agricultural, manufacturing, or mechanical operations; artificial manures; farm and garden seeds, etc., etc. One of the gentlemen connected with the journal is a proficient in music, and experienced in the selection of piano-fortes, flutes, etc., and will execute orders in that department.

He will also act as agent in the purchase and sale of Real Estate.

☞Particular attention to business connected with the Patent-Office.

Letters of inquiry on these matters will be promptly attended to.

COLLECTORS WANTED—In all the States south and west of Ohio and Pennsylvania. Those of experience preferred, and unquestionable references required. Address, post-paid, or in person, at this office.

NEW BOOKS.

FERN LEAVES FROM FANNY'S PORT FOLIO. Second Series. Auburn and Buffalo: Miller, Osborn & Mulligan. London: Sampson Low, Son & Co. 1854. Pp. 400.

"There's another of Miss Fiddlestick's articles! She's getting too conceited, that young woman! Just like all newly-fledged writers, mistakes a few newspaper puffs for the voice of the crowd, and considers herself on the top of the literary ladder. It'll take *me* to take the wind out of her sails; I'll dissect her before I'm a day older, as sure as my name is Ezekiel Broadbrim."—So Fanny makes our drab-coated brother to soliloquize about some body. But it can't be about Fanny herself, for the masses will read her, and the editors may say what they please; and the masses are right. They can not have a more amusing book to read half an hour after dinner. It is spicy, though, like spice, it has its peculiar flavor, and that flavor is ever the same; lively, and piquant, whatever else it is or is not. It is very amusing, and as destitute of positive faults as any book of mere amusement in our recollection.

NEW MUSIC, BY HALL & SON.

THE following are among the admirable pieces recently published by this enterprising house:

Les Adieux, a favorite duet from *Lucia di Lammermoor*, by Donizetti, for pianoforte. By Fred. Beyer.

Juliet. Romanza. Written by H. F. Chorley, and composed by Wm. Vincent Wallace. Excellent.

Away with the Past. Ballad. Words by Wm. Truesdell. Composed by Geo. Washbourn Morgan. Very good.

The Angler's Polka. Composed by Wm. Vincent Wallace. Very characteristic.

Œuvres Favoris. By Wilhelm Kuhe. No. 3. *The Jager.* By Spohr. Elegant classical music.

My Home in Old Kentuck. Song and Chorus. Written and composed by Tucky Ho. A pleasant air, dedicated to Uncle Davy, Lexington, Ky.

List of Patents Issued,

FROM MAY 2 TO JUNE 6.

Simeon Coon, of Ithaca, N. Y., for improvement in sewing-machines.

E. L. Norfolk, of Salem, Mass., for improvement in machinery for drawing flax.

Clark Wheeler, of Little Valley, N. Y., for improvement in bee-hives.

Heman Crosby, Jr., of Watertown, Conn., for improvement in sewing-machines.

Christ'r Hodgkins, of Boston, assignor to Nehemiah Hunt, of same place, for improvement in sewing-machines.

Otis Avery, of Homesdale, for improvement in sewing-machines.

G. T. Enoch and Daniel Wissinger, of Springfield, Ohio, for improvement in seed-planters.

Wm J. Casselman, of Vernon, N. Y., for improved hub-borer.

Wm. Damorel, of Brooklyn, N. Y., for improved extension-bit guard-key for door-locks.

Heman H. Dean, of Adrian, Mich., for improved felloe-machine.

Jacob Edson, of Boston, Mass., for improved pump.

Chas. K. Farr, of Hinds county, Miss., for improvement in in cultivators.

Albert Fink, of Baltimore, Md., for improvement in bridges.

Charles R. Fox, of Chicago, Ill., for improved journal-box for saw-mill carriage.

Nelson Gavitt, of Philadelphia, Pa., for improvement in machinery for culling paper.

Platt C. Ingersoll, of Elmira, for improved arrangement of the pestle and mortar.

William Loughridge, of Weverton, Md., for improved method of unloading canal-boats and other vessels.

H. G. Marchant, of Annisquam, Mass., for improved manure and sand-loader.

J. & G. W. Prescott, of Boston, Mass., for machine for reducing wood to slivers.

J. A. Roth and J. Lea, of Philadelphia county, Pa., for improvement in bleaching apparatus.

J. Rogers, of Poultney, Vt., for improved machine for marking out sash.

Wm. S. Reinert, of Spring Garden, Pa., for machine for weighing and printing butter.

A. M. Sprague, of Mobile, Ala., for adjustable flue-bottom for steam-boilers.

A. M. Sprague, of Mobile, Ala., for improvement in pistons for steam-engines.

D. Talcot, of New-York, for improvement in the construction of hatches.

Enoch Woolman, of Damascoville, Ohio, for improved arrangement of friction-roller in inclined-plane hinges.

B. & T. Winans, of Baltimore, Md., for improved locomotive fire-box.

F. Davis, of Keene, N. H., assignor to J. M. Reed, of Swansey, N. H., for improvement in screw-jacks.

Wm. Barker, of Utica, N. Y., for improved clapboard joint.

C. Roberts, of Belleville, Ill., for improvement in harvester-rakes.

H. Frisbie, of Olmsted, Ohio, for improved bath-machine.

Wm. Stoddard, of Lowell, Mass., for improved rotary shingle-machine.

C. A. Read, of Waterloo, N. Y., for improvement in self-heating smoothing-irons.

W. L. Bass, of Cambridgeport, Mass., for improvement in tables for ships' cabins.

S. A. Skinner, of Brownington, Vt., for improvement in surgical-splints.

I. M. Hopkins, of Pascoag, R. I., for improvement in knitting-machines.

J. Putnam, of Salem, Mass., for improvement in moulding clay-pipe couplings.

T. J. Sloan, of New-York, for improvement in water-indications of steam-boilers.

C. G. Sargeant, of Lowell, Mass., for improvement in machinery for combing wool.

G. Rogers, of Enfield, Eng., for improvement in baths for coating metals with other metals.

Henry Burt, of Newark, N. J., assignor to the "Newark Patent Hosiery Co.," of same place, for improvement in knitting-machines.

A. Greenleaf, of Kingston, Pa., for improved water-wheel.

L. Lackey, of Sutton, Mass., for improvement in machines for pegging boots and shoes.

H. B. Hammon, of Bristolville, Ohio, for improvement in ox-yokes.

D. P. Baldwin, of San Francisco, Cal., for improvement in shower-bath.

L. Dederick, of Albany, N. Y., for improved hay and cotton-presses.

G. E. Higgins, of Syracuse, N. Y., for improved fastening for ear-rings.

F. Baker, of Pepperell, Mass., for improved lathe for irregular forms.

B. Hughes, of Rochester, N.Y., for improvement in trip-hammers.

C. M. Daboll, of New-London, Conn., assignor to himself and A. P. Daboll, of same place, for improved catch for holding the bit in brace-stocks.

W. Eaton, of Carbondale, Pa., for improvement in machines for cutting glaziers' points.

C. H. Dana, of West-Lebanon, N. H., for improvement in potato-diggers.

J. Hultz, of Berlin township, O., for improvement in gun-locks.

N. W. Cilley, of Nottingham township, N. Y., for improved method of hanging gates, etc.

Wm. H. Mitchell, of Brooklyn, N.Y., for improvement in machinery for composing type.

J. Peck, of New-Haven, Conn., for improvement in fire-arms.

L. Scott, of St. Louis, Mo., for improved portable grinding-mill.

L. Stewart, of Washington, D. C., for improved saw.

H. H. Taylor, of Springfield, Mass., for improved machine for paging books.

Wm. H. Towers, of Philadelphia, Pa., for improvement in guitars.

Wm. H. Street, of New-York, for improved mode of attaching blankets to cylinders for printing-presses.

M. Spear, of Baltimore, Md., for improvement in mitre-box.

I. W. Little, of Newbury, Mass., for improvement in ox-yokes.

P. S. Howes, of Boston, Mass., for improvement in self-heating smoothing-irons.

D. M. Smith, of Springfield, Vt., for improved bathe-bog.

P. B. Tyler, of Springfield, Mass., for improved mode of nibbling saw-teeth.

J. Edmondson, of Salford, England, and C. Haworth, of Marsden, England, executors of Thos. Edmondson, deceased, late of Salford, aforesaid, for improved case for holding railway and other tickets.

L. W. Leels and B. M. Smith, of Philadelphia, Pa., for improvement in pydraubic heaters.

E. Brown, of Waterbury, Conn., assignor to the "Scoville Manufacturing Co.," of same place, for improvements im machine for making hinges.

E. H. Graham, now or late of Biddeford, Me., assignor to himself and A. Wheeler, of Lowell, Mass., for improvement in magazine-guns.

J. Burch, of Cragg Hall, near Macclesfield, Eng., for improvement in constructing ships for safety and escape.

Peter Teal and Chas. Tyler, of Philadelphia, assignors to W. P. Cresson and R. Patterson, of same place, for improvement in lathes for turning the interior surface of hollow-ware. Patented in England, April 9, 1853.

J. Edmondson, of Salford, Eng., and C. Haworth, of Marsden, Eng., executors of T. Edmondson, deceased, late of Salford, aforesaid, for improved machine for printing railway and other tickets. Patented in England, March 19, 1854.

E. A. Lee, Roxbury, for improvement in pianoforte action.

G. B. Turner, of Cuyahoga Falls, for improved smut-machine.

A. N. Newton, of Richmond, Ind., for improved primer for fire-arms.

L. A. Miles, of Hopkinsville, Ohio, for improved pump-valve.

R. P. Adams, of Clinton, Ill., for improved excavator for fence-posts.

H. T. Anthony and F. Phœbus, of New-York, for improved apparatus for the manufacture of daguerreotype cases, etc.

I. Babbitt, of Roxbury, for improvement in hones. Patented in England, March 30, 1854.

Hiram Baldwin, of Nashua, for improvement in ratchet-lever.

J. Beach, of De Ruyter, for improvement in cheese-hoops.

A. T. Clark, of Lancaster, for improved mode of balancing window-sashes.

H. A. Chase, of Boston, Mass., for improvement in counterpoise to cast locomotive-wheels.

J. Curtis, of Chicago, Ill., for improved wind-mill.

E. Davis, of Chicago, Ill., for improved self-acting power-press.

L. Danforth, of Buffalo, N. Y., for improved machine for making book-covers.

J. P. Hayes, of Philadelphia, Pa., for improvement in hot-air furnaces.

A. Jacobs, of Ithaca, N. Y., for improved apparatus for regulating the supply of feed-water to steam-boilers.

J. McMullen, of Baltimore, Md., for improved mechanical means for preventing incrustation in steam-boilers.

J. Myers and R. G. Eunson, of New-York, for improved machine for sawing thin boards, etc.

J. Pigot, of Brooklyn, N. Y., for improvement in apparatus for making pailiasses.

T. S. Steadman, of Murray, N. Y., for improvement in clover-harvesters.

L. C. Suggett, of Lexington, Ky., for improvement in processes for treating hemp.

J. C. Strode, of West-Chester, Pa., for improved hydraulic-ram.

R. L. Wright, of Blue Rock, Pa., for improvement in tire-bending machines.

R. & T. Winans, of Baltimore, Md., for improvement in locomotive-tenders. Ante-dated May 9, 1854.

T. W. Brown, of Boston, Mass., assignor to Wm. W. Mead, of same place, for improvement in button-hole cutters.

J. Mansure, of Philadelphia, Pa., assignor to Farr & Thompson, of Philadelphia county, Pa., for improved bracelet-clasp.

Isaac M. Singer, of New-York, for improvement in sewing-machines.

Christian B. Miller, of Wilmington, Del., for improvement in processes for galvanizing metals.

John Murphy, of New-York, for improvement in the process of treating gutta percha.

Charles T. Appleton, of Roxbury, Mass., for improvement in dyeing processes. Patented in England, Aug. 30, 1853.

Wm. Beal, of Lowell, Mass., for improvement in corn-crushers.

J. H. Barsanter, of Philadelphia, Pa., for improvement in knitting-machines.

Charles H. Bigelow, of Lawrence, Mass., for improved mode of manufacturing tarbine wheels.

John Brown, of New-York, for improvement in hot-water apparatus.

Abel Brearer, of Sangatuck, Conn., for improvement in fastening the discs and rims of car-wheels.

J. H. Farchild, of Jericho, Vt., for improvement in hooks and eyes.

Charles Gregg, of Brooklyn, N. Y., for improvement in vices or chucks for holding cylindrical bodies.

J. Harraday, of New-York, for improved machine for cutting out cloth. Patented in England, Jan. 20, 1854.

Silas A. Holmes, of Brooklyn, N. Y., for improvement in cameras for taking stereoscope or other daguerreotypes.

Carmi Hobson, of Hannibal, Mo., for improved stove-machine.

Thomas J. Jarrett, of Horsham, Pa., for improvement in hay-elevators.

Geo. Neilson, of Boston, Mass., for improvement in ventilating-window for railroad car.

J. R. Pierce, of Castile, N. Y., for improvement in neck-yokes.

D. Pool, of Mt. Carmel, Ill., for improvement in quartz-crushers.

E. M. Ray, of Providence, R. I., for improvement in knitting machines.

M. W. Stevens and E. G. Kinsley, of Stoughton, Mass., for improvement in sewing-machines.

Robert S. Thomas, of Wilmington, N. C., for improved typography.

Benj. C. Vanduzen, of Cincinnati, O., assignor to John Martin and Benj. C. Vanduzen, for improvement in furnace grate-bars.

Wm. Wesley, of New-London, Conn., assignor to Jonathan Whipple, Jr., of Hopedale, Conn., for improvement in self-acting nipper-blocks.

Brown S. Wood, of Burlville, R. I., for improvement in knitting-machines.

Robt. Waddell, of England, for improvement in balancing slide-valves of steam-engines. Patented in England, April 27, 1853.

A. H. Rautch, of Bethlehem, Pa., for improvement in machines for washing bottles.

Chas. F. Brown, of Warren, R. I., for improvement in instruments for taking deep sea-soundings.

Jos. de Palm, of New-York, for improvement in brick pottery-kilns. Patented in England, July 13, 1852; in France, August 13, 1852; in Holland and Belgium, Sept. 15, 1852.

Henry R. Campbell, of Lebanon, N. H., for improvement in the combination of a railroad track and wheels.

Samuel McCormick, of Dublin, Ireland, for improvement in pressing the thread upon screw-blanks. Patented in England, March 22, 1853.

Donald Taylor, of East-Boston, Mass., for berth-kneel former.

Henry Allen, of Norwich, Conn., for improved machine for dressing polygonal timber.

Wm. Ballard, of New-York, for improvement in bent timbers for ship-frames.

Whitman Price, of Goldsborough, N. C., for improvement in cultivators.

Jared Pratt, of Taunton, Mass., for improvement in making seamless metal-tubes.

Wm. W. Hill, of Greenport, N. Y., for arrangement of dampers in rotary-stoves.

Walter Westrup, of Wapping, England, for improvement in grain-mills. Patented in England, Jan. 22, 1850.

Mathias P. Coons, of Brooklyn, N. Y., for improved rivet-clamp for wire-fences.

W. A. Flanders, of Sharon, Vt., for moth-killer.

Ross Dugan, of New-York, for improved machine for cleaning and watering streets.

Edward and James M. Clark, of Lancaster, Pa., for improvement in flouring-mills.

Smith Beers, of Naugatuck Conn., for improved method of turning hubs, etc.

Timothy F. Taft, of Worcester, Mass., for improved device for operating cutter-heads of planing machines.

Edward P. Day, of New-York, for improvement in machines to print subscribers' names, etc., on newspapers.

Alfred Brady, of New-York, for improvement in vault-covers.

Noah W. Speers, of Cincinnati, O., for improved hydrant-cap.

Jas. A. Whipple, of Boston, Mass., for improved mechanism for operating pumps.

Samuel H. Dudley, of Milton, Conn., for improvement in road-scrapers.

Francis M. English, of Hopkinsville, Ky., for improvement in whiffletrees.

Robt. M. Wade, of Wadesville, Va., for improved lubricator.

Alex. B. Latta, of Cincinnati, O., for improvement in steam-generators.

Chas. F. Martine, of Boston, Mass., for improvement in sofa-bedsteads.

Hymen L. Lipman, of Philadelphia, Pa., for improved eyelet-machine.

Elijah Phelps, of Hendersonville, Ill., for improvement in excavators.

Wm. B. Johnson, of Staunton, Va., for improvement in seed-planters.

Patrick Clark, of Rahway, N. Y., for improved water-level indicator for steam-boilers.

Thomas and Samuel Champion, of Washington, D. C., for improvement in feathering paddle-wheels.

Waitman Davis, of (near) Morgantown, Va., for improvement in seed-planters.

John Sheffield, of Pultneyville, N. Y., for improvement in apparatus for filing mill-saws.

Robt. H. Collyer, of New-York, for improvement in gold-amalgamators.

Isaac R. Shank, of Buffalo, Va., for improved lath-machine.

David Russell, of Drewersburgh, Ind., for improved method of operating saw-mill blocks.

Harrison C. Clark, of Worcester, Mass., for improved lathe.

Thomas Crossley, of Boston, Mass., for improvement in weaving cut-pile fabrics.

Wm. Cann, of Black-Rock, N. Y., for cleaning bolts of flouring-mills.

Edward Harrison, of New-Haven, Conn., for improvement in grinding-mills.

Jerdon L. Mott, of New-York, for improvement in securing car-wheels upon axles.

Edwin J. Green, of Cedarville, for improvement in joint-bodied buggies.

Levi Dederick, of Albany, N.Y., for improvement in hay-presses.

James J. Johnson, of Alleghany, Pa., and James V. Cunningham, of Pittsburgh, Pa., for improvement in moulding hollow-ware.

John C. Reed, of Mount-Vernon, O., assignor to C. P. Buckingham and Henry P. Upton, of same place, for improvement in grinding-mills.

Hervey Ely, of Rochester, N. Y., assignor to Samuel B. Ely, of same place, for improvement in drying flour.

Thomas Wallace and Henry Bachreister, (the latter now deceased,) of Philadelphia, Pa., for improved blowing-fan.

Dennis Donnovan, for himself, and as administrator of Witchell G. Hallman, deceased, now, and late of Philadelphia, Pa., assignor to H. J. White, of Philadelphia, Pa., for improvement in cooking-range.